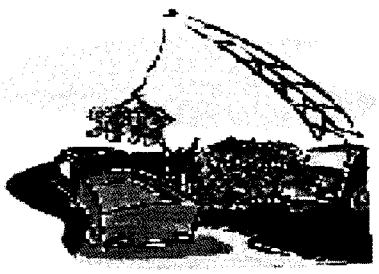
RENEWAL OF OPERATION PERMIT FOR

SARASOTA COUNTY

CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX

C&D RECYCLING AND CLASS III

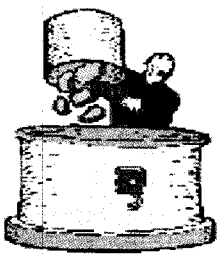
Material Recovery Facility



FDEP ID# 4058C02034

Prepared For:

SARASOTA COUNTY
ENVIRONMENTAL SERVICES
SOLID WASTE OPERATION
4000 KNIGHTS TRAIL ROAD
NOKOMIS, FLORIDA



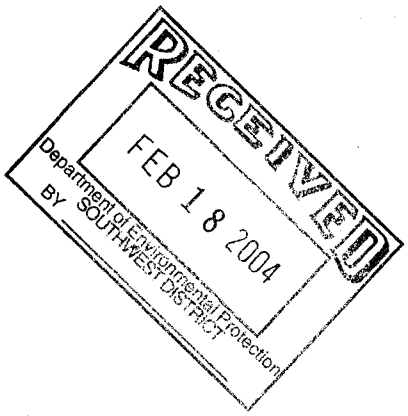
Prepared By:

PBS&J
482 S Keller Road
Orlando, Florida 32810
Project # 120499.10
Revised
February 17, 2004

PBS&J

An employee-owned company

February17, 2004



Kim B. Ford, P.E.
Solid Waste Section
Division of Waste Management
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa FL 33619

Re: CCSWDC – C&D and Class III MRF - Waste Processing Facility
Pending Permit #134912-003-SO, Sarasota County

Dear Mr. Ford:

This letter is in response to your letter of August 21, 2003 requesting additional information. Your comments are in italics followed by our response. Included with this letter are three copies of the revised Table of Contents, revised Section 1 application pages 1 of 4 and 2 of 4, Section 2, Section 3 and Appendices A, B, C, D, E and F, and new Appendices H and I. These documents are three hole punched for replacement of the documents in the permit application.

Comment 1: *Application Form. Revisions to the application form (#62-701.900(4)) are requested as follows:*
Part A.1. - to also indicate Class III MRF, waste screening, volume reduction, and waste grinding and densification.
Part A.7. - to provide the latitude and longitude for the most central location at the facility.
Part A.15. - to provide references to all supporting documents related to the expected volume of waste to be received.
Part B. - to provide the location with specific references for each of the required reports and documentation.

Response 1: Part A.1. – The box for "Class III MRF" was checked. The box for "Other Describe" was also checked and explained as "waste screening, volume reduction, and waste grinding and densification." Three copies of the revised application page 1 of 4 are included with this letter.

Part A.7 – The latitude and longitude was calculated to the center of the MRF and corrected on the form. Three copies of the revised application page 1 of 4 are included with this letter.

Part A.15. – This line asks for the "Expected volume of waste to be received in cubic yards or tons per day." Waste is weighed on a scale so the amount is reported in tons. The supporting documents related to the expected volume of waste to be received are the actual amounts received in the past. Over the last five years the annual tonnage has ranged between 55,000 and 60,000 tons per year. Based on receiving and processing waste 312 days per year, the average has ranged between 176 and 192 tons per day. The amount reported on the form is an expected average volume of 200 tons per day based on 312 working days per year. Three copies of revised application page 2 of 4 are included with this letter.

Part B – Part B was revised to add the applicable references. Part B was submitted in Section 2 of the application. Three copies of the revised Section 2 are included with this letter.

Comment 2: *62-701.300. Confirmation with related explanations to verify compliance with each of the prohibitions is requested.*

Response 2: This is an existing MRF that was permitted in 1998. The MRF complied with the prohibitions that were in effect at the time the permit authorizing construction was issued. The MRF complies with 62-701.300 Prohibitions as follows:

(1) General Prohibitions
  (a) The MRF is a permitted solid waste management facility.
  (b) The MRF is operated in a manner and location such that it does not cause air quality standards to be violated or water quality standards or criteria of receiving waters to be violated.

(2) Siting
  (a) The MRF is located in an area where the geological formations or other subsurface features provide support for the solid waste.
  (b) There are no potable water wells within 500-feet of the MRF. The MRF has its own potable water well located 500-feet east of the perimeter fence.
  (c) No waste is being placed in a dewatered pit.
  (d) The MRF is not subject to frequent and periodic flooding. Storm water is being managed per the permit.
  (e) No solid waste is being placed in any natural or artificial bodies of water including ground water.
  (f) Wetlands are located within 200-feet of the MRF. The MRF has an impervious concrete surface for processing waste with a leachate collection and disposal system.
  (g) No solid waste is stored on the right of way of any public highway, road or alley.
  (h) There is no existing or approved potable water well serving a community water supply within 1000 feet of the MRF.

(3) There is no burning of solid waste at this MRF.
(4) Not applicable. There is no disposal of hazardous waste at this MRF.
(5) Not applicable. There is no disposal of PCBs at this MRF.
(6) Not applicable. There is no disposal of biomedical waste at this MRF.
(7) Not applicable. This prohibition applies to Class I Landfills.
(8) Not applicable. This prohibition applies to Class I Landfills.
(9) Not applicable. This prohibition applies to waste-to-energy facilities.
(10) Not applicable. There is no disposal of liquid wastes at this MRF.
(11) Not applicable. This MRF does not accept used oil or oily waste for disposal.
(12) Yard trash. The MRF meets this prohibition for storage and processing of clean wood. The nearest potable water well is 500-feet away. The nearest water body, Storm Water Pond #7, is 1,700 feet away. There are no wells for community water

supplies on or near the site. The set back distance is 200-feet. There are no wells within 500-feet of the MRF.

(13) Tanks. Leachate collected from the impervious area is stored in tanks. The tanks are not located within 500-feet of any existing community water supply system or any existing non-transient non-community water system, nor within 100-feet of any other existing potable water supply well.

(14) Indoor storage. The MRF has a roof with open sides, an impervious surface and a leachate collection system.

(15) Storage in vehicles. Vehicles with solid waste will be covered and stored at the MRF for no more than seven days. The MRF is not in violation of any of the prohibitions in subsection (2) of 62-701.300.

(16) Existing facilities. This is a previously permitted MRF that complies with the prohibitions. Lateral expansions will also comply with the prohibitions.

Comment 3: *62-701.320(5). Responses and references to specifically related supporting information to demonstrate compliance with each part of the application form and related rules are requested. Revisions to Section 2 are requested to provide specific references to each previously provided document (such as record drawings and facility calculations) or to new documents for the required supporting information.*

Response 3: Section 2 was revised as applicable. Three copies of revised Section 2 are included with this letter along with a pocket for the record drawings as listed in the MRF permit.

Comment 4: *62-701.320(7)(d). Revisions to the engineering report table of contents are requested to include the pump operation and maintenance manual as an appendix.*

Response 4: The Table of Contents was revised to include reference to the pump operation and maintenance manual as Appendix H. Three revised copies of the table of contents are included with this letter, and three copies of Appendix H.

Comment 5: *62-701.320(7)(f)(6), and 62-701.710(2)(b). A site plan, drawn to scale, is requested to show all required information, the entire facility layout and related information as follows:*

(a) impervious surfaces with leachate containment;
(b) covered areas that divert rainfall away from the impervious surfaces with leachate containment;
(c) the limits of each unloading/tipping area;
(d) the limits of each sorting area;
(e) the limits of each processing area;
(f) the limits of each storage area;
(g) the location of each storage container;
(h) the limits of each loading area.

Response 5: See revised Figure 3-2 in Section 3. Three copies are included with this letter.

Comment 6: *62-701.320(8)(a). Proof of publication of notice of application (see attached notice) is requested.*

Response 6: Sarasota County sent FDEP proof of publication of notice of application.

Comment 7: 62-701.320(10). List and reaffirm those referenced parts of the previously provided reports and documentation (such as engineering calculations for facility operational capacity, equipment capacity, storage capacity, and record drawings for the entire facility and all improvements) that provide information appropriate for this pending permit application and that are still valid. Those parts that are no longer valid should be deleted, or revised and replaced.

Response 7: Part B was revised to add the applicable references. Part B was submitted in Section 2 of the application. Three copies of the revised Section 2 are included with this letter.

Comment 8: *62-701.320(15). Revisions to the training plan (Appendix E) to demonstrate compliance with F.A.C. Rule 62-701.320(15), and proof of training (course title, hours, date) for each of the existing employees, are requested.*

Response 8: Appendix E Training Plan and Staff Chart was revised to state that the training plan should be in compliance with 62-701.320(15), a staff chart and proof of training certificates were also added. Three copies of revised Appendix E are included with this letter.

Comment 9: *62-701.400(6)(c). Documentation (signed and sealed by a professional engineer) to demonstrate that the each leachate storage tank has been inspected as required to confirm that each tank has been maintained, and that each component of the tank system is performing adequately, is requested.*

Response 9: The leachate storage tank is inspected per F.A.C. 62-701.400 (6) (c) 8 and 9 as required in Section 3.3.0 of the Operation Plan. A copy of the letter, signed and sealed by a professional engineer Mr. Paul Winger, demonstrating that the tanks have been inspected per the regulations and are in good working order is included with this response. The original was mailed directly to FDEP.

Comment 10: *62-701.710(2) and (4). Revisions to the Operations Plan (Section 3) are requested for the following items:*

a) *Section 1.0 - to describe the source and reason for acceptance for each of the "selected Class III waste materials";*
b) *Section 1.1 - to include references to the "densifier" and "crusher" equipment specifications;*
c) *Section 1.2 -to include references to the "grinder" equipment specifications;*
d) *Section 1.3 - to describe all sources for all "mixed loads", and the segregation of "selected Class III materials" from all C&D debris;*

e) *Section 1.3 - to include references to the "screen" equipment specifications;*
f) *Section 1.3 - to include a comprehensive description of the shingle recycling, and related markets and recyclers (names, addresses, and telephone numbers);*
g) *Section 1.4 - to identify each type of non-Class III waste and non-conforming special waste);*
h) *Section 1.5 - to identify each of the "recyclables", and to describe the storage within the leachate containment area (or covering for each container);*
i) *Section 1.6 - to include a description (or reference to a description) for the management of all unknown wastes and suspected hazardous wastes;*
j) *Table 1. - to include a reference to the related site plan (drawn to scale with each area identified);*
k) *Figure 3. - to identify excavated waste as a waste not accepted at the facility;*
l) *Section 3.0 - to include references to each of the related "drawings";*
m) *Section 5.0 - to include comprehensive descriptions for all waste segregation and procedures for spotters (trained spotters), and a description of each type of the "non-recyclable materials" which will be "redirected to the landfill working face";*
n) *Section 7.0 - to include each disposal location for each type of waste and materials;*
o) *Appendix A - to include the basis of all calculations for all related system components (such as the facility layout and dimensions, pipe sizes, pump capacities) are requested to demonstrate that all leachate will be contained for the 100 year/24 hours storm, and removed as it is generated;*
p) *Appendix B - to describe "reportable limits" and "threat to life or property"; and to identify (by name and position description) the "facility manager", "load master", and all "key personnel", and to describe the training for each;*
q) *Appendix C - to require the bypassing of all incoming waste until the facility is repaired in the case of damaged or destroyed buildings (including roof structure over leachate containment areas);*
r) *Appendix D - to require the bypassing of all incoming waste until the facility is repaired in the case of damaged or destroyed buildings (including roof structure over leachate containment areas);*
s) *Appendix F - to include all equipment specifications.*

Response 10: Sections 1 through 8 and Appendices A through F, including tables, were revised per the comments in Comment 10. Three revised copies of each are included with this letter.

Comment 11: *62-701.710(2)(a). A projection of waste types and quantities expected, and the assumptions used to make the projections, are requested.*

Response 11: See Table 3-2 in Section 3.

Comment 12: *62-701.710(2)(e). Revisions to the Operations Plan are requested to include a comprehensive description of temporary storage, handling and transport for each specific type of unacceptable waste (such as bagged waste, household garbage, auto parts, electronics, drums, white goods, tires, yard trash, and all excavated waste including previously buried C&D debris) that spotters should search for and remove. The description should also include:*

1) *The location and description of each specific type of container (including containers for storing non-conforming special wastes such as batteries, paints, chemicals, thermostats, liquids, etc.);*
2) *Methods and procedures for providing secure storage areas;*
3) *The maximum storage time and maximum quantity for each waste to be stored; and*
4) *Revisions to the contingency plans for the management and storage of unknown wastes and hazardous wastes.*

The size, type, and location of each container convenient for use and storage for each type of unacceptable waste is requested. Specific descriptions are requested to demonstrate that each type of unacceptable waste will be stored to control odors and vectors, and prevent discharge of contaminants to the ground. All Class I/Class III waste containers should be kept covered for storage and the specific waste types to be placed into each Class I/Class III waste container should be completely described.

Response 12: See Figure 3-2 in Section 3.

Comment 13: *62-701.710(2)(f). The location (name and address) and hours of operation for each receiving facility, and letters of acceptance for each receiving facility, for each type of waste and each type of recyclable material are requested.*

Response 13: See Appendix H for this information. The information is provided for commercial facilities that regularly receive waste or recyclable materials. Some receiving facilities for recyclable materials vary from customer to customer. For example, there is a Reusable Building Materials area at the site. A private citizen may purchase a used door for his house. This is a recyclable material for a destination that is unknown and cannot be determined. This is also true for other recyclable materials such as crushed concrete that is used for road base.

Comment 14: *62-701.710(3)(a). Revisions to the Operations Plan are requested to describe the collection and disposal of litter daily on operating days.*

Response 14: The Section 3.1.7 of the revised Operation Plan included with this response.

Comment 15: *62-701.710(3)(b). Revisions to the Operations Plan, including related descriptions with references to supporting calculations, are requested to confirm that the leachate control system will prevent the discharge of leachate and will minimize the presence of standing water.*

Response 15: See Appendix A Containment Pad Capacity Calculation. Three copies are included with this letter. These calculations are dated June 5, 2001, and were submitted for the Permit Modification dated February 21, 2002. These calculations were revised because the leachate containment area was increased from 0.61 acres to 0.76 acres to include additional leachate containment areas such as the truck-loading pit. The leachate containment area as shown on Figure 3-2 in Section 3 is 0.93 acres. The roofed area is 0.17 acres. The roofed area has gutters

that discharge rainfall off the leachate containment pad so the leachate containment area is reduced to 0.76 acres. This agrees with the revised calculations dated June 5, 2001. The calculations demonstrated that the leachate control system would prevent the discharge of leachate, and remove it at a rate that will minimize the presence of standing water.

Comment 16: *62-701.710(3)(c). Revisions to the Operations Plan, including related descriptions with references to supporting calculations, are requested to demonstrate that each storage area will hold the expected volume of materials until they are transferred for disposal or recycling.*

Response 16: See Table 3-1 in Section 3.

Comment 17: *62-701.710(4)(a)1. A list of all persons responsible for the facility operations including each person's name with position title are requested:*

a) with phone numbers to contact in case of an emergency;
b) for each trained operator and each trained spotter;
c) for each equipment operator;
d) for the person(s) responsible for record keeping; and
e) for the person responsible for providing reports to the Department.

Response 17: See revised Appendix E Training and Staff Chart included with this letter.

Comment 18: *62-701.710(4)(b). Revisions to the Operations Plan are requested to provide the schedule for removal of each type of waste for recycling or disposal; and to provide the schedule for cleaning for each waste processing and storage area; and to provide the schedule for cleaning each drain and each leachate conveyance so that leachate flow is not impeded.*

Response 18: See Table 3-1 in Section 3.

Comment 19: *62-701.710(4)(c). Revisions to the Operations Plan are requested to provide a comprehensive description of inspection and waste control procedures to demonstrate:*

a) that no waste will be disposed (unloaded, spread, or compacted) during non-daylight hours;
b) that a trained spotter will inspect each load of incoming waste as it is received and unloaded, and as it is spread;
c) at a minimum, spotting will occur from the floor of the tipping/sorting area (while off of equipment);
d) that all unacceptable waste will be removed from the incoming waste immediately, and no other waste will be unloaded in the immediate vicinity until all non-C&D wastes have been removed and stored in the designated waste containers;
e) that a sufficient number of containers for storage will be available at the site at all times;
f) containers which store waste will be kept within the leachate containment areas or kept covered with a waterproof cover during inclement weather, when full, and at the end of each day.

g) putrescible waste will be removed every 48 hours, except on weekends and holidays.

The size, type, and location of each container convenient for use and storage for each type of unacceptable waste is requested. Specific descriptions are requested to demonstrate that each type of unacceptable waste will be stored to control odors and vectors, and prevent discharge of contaminants to the ground. All Class I/Class III waste containers should be kept covered for storage and the specific waste types to be placed into each Class I/Class III waste container should be completely described.

Response 19: The response to a), b), c) and d) can be found in Section 3.5.0 of the revised Operation Plan. The response to e) and f) can be found in Table 3-1 and Figure 3-1 of the revised Operation Plan. The response to g) can be found in Section 3.1.9. In response to "g", the Class I dumpster is emptied twice a week on Wednesday and Saturday, or sooner if full. We believe this complies with the regulations. Regulation 62-701.710 (4) (b) states: "Stored putrescible wastes shall not be allowed to remain unprocessed for more than 48 hours; however, if the operation plan includes provisions to control vectors and odors, putrescible wastes may be stored for up to seven days." The MRF does not process putrescible wastes. Small amounts of putrescible wastes are found in the waste, and this putrescible waste is put in a dumpster with a lid. The dumpster with a lid controls problems related to vectors and odors so we believe the regulations will allow this waste to be stored for up to seven days. The operation plan calls for empting the dumpster twice a week by the franchise hauler.

Comment 20: *62-701.710(4)(d). Revisions to the Operations Plan are requested to describe all odor and vector controls, and related site monitoring and inspections.*

Response 20: See Section 3.1.9 of the revised Operation Plan that describes odor and vector controls and related monitoring and inspections. See also Table 3-1 and Section 3.3.0.

Comment 21: *62-701.710(4)(e). Revisions to the Operations Plan are requested to describe all fire protection and controls, and related site monitoring and inspections. A copy of the most recent fire safety survey (not more than one year old) showing that all items of deficiency have been corrected is requested.*

Response 21: See Section 3.1.8 of the revised Operation Plan. F.A.C. Chapter 62-701.710(4)(e) states that adequate fire protection shall be available at all times. Adequate fire protection is available at all times and is provided by the Sarasota County Fire Department. The MRF has an annual inspection. A copy of the latest inspection report is on file with FDEP. The Fire Safety Inspection Report is included in Appendix I of the revised application included with this letter. There is a 3" diameter PVC pipe that serves as an on-site water system with quick coupler hose adapters and nozzles on a 250-foot grid pattern. Meyer & Gabbert also have a 2,500-gallon water truck on site that can be used to fight fires.

Comment 22: *62-701.710(7). A complete response to Mr. Steve Morgan's August 20, 2003 letter (attached) regarding financial assurance cost estimates, and proof of financial assurance are required. You may call Mr. Morgan at (813) 744-6100, extension 385, to discuss any questions*

regarding these items. Please note that while the financial assurance cost estimates for the MRF are included with the Class I landfill cost estimates, the MRF is not "exempt" from financial assurance as stated in Section 2 (page 2 of 3).

Response 22: Closure costs for the MRF were recalculated, and are included in revised Section 3.

Comment 23: *62-701.710(8). Documentation (signed and sealed by a professional engineer) to demonstrate that the entire permitted stormwater system has been inspected to confirm that it is maintained, and that each component of the system is performing adequately, is requested.*

Response 23: Stormwater run-off from the MRF flows into a perimeter ditch, which is drains into the stormwater management system for the Central County Solid Waste Disposal Complex (CCSWDC). The Southwest Florida Water Management District (SWFWMD) permitted the stormwater management system for CCSWDC by giving the facility the Management and Storage of Surface Waters (MSSW) Permit Number 407932.01, issued August 24, 1993. Other related permits for CCSWDC include the Environmental Resource Permit #407932.01, and the Multi-Sector NPDES Permit FLR05F499 with expiration date of May 19, 2007. The perimeter ditch was inspected. The system is functioning as designed to remove the stormwater from the MRF, and direct it into the stormwater management system for CCSWDC.

Comment 24: *62-701.710(9). Revisions to the Operations Plan are requested to provide a comprehensive description of all record keeping with references to related forms; and to demonstrate compliance with the related rules, the following items are requested:*

a) waste quantity reports for the 1st and 2nd quarters of 2003 that include all the information required by F.A.C. Rule 62-701.710(9)(a) and that balance tons in = tons out with appropriate factors for adjustment with explanations when needed; and

b) the annual reports for C&D debris recycling, as required by F.A.C. Rule 62-701.710(9)(b), for the past 3 years.

Response 24: The waste quantity reports for the last three years are included with this letter.

Sincerely,

Joe Miller, P.E. #39177
Project Engineer

C: File, 120499.10 0001
Frank Coggins, Sarasota County w/ 2 copies
James Gabbert, Meyer & Gabbert Excavating Contractors, Inc. w/1 copy

PBS&J

SARASOTA COUNTY

"Dedicated to Quality Service"

February 17, 2004

Kim Ford, P.E.
Solid Waste Section / Division of Waste Management
Florida Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619

RE: Central County Solid Waste Disposal Complex
MRF Pending Permit No.: 134912-003-SO

Dear Mr. Ford:

This letter is being submitted per 62-701.400(6)(c) and is documentation to demonstrate that each of the leachate storage tanks at the MRF are being inspected as required by 62-701.400 (6) (c) 8 and 9 as required in Section 3.3.0 of the MRF Operation and Maintenance Manual. Specifically:

8. All above ground tanks are equipped with an overfill prevention system which includes level sensors gauge, high level alarms and automatic shutoff controls. The overfill control equipment is inspected weekly by Sarasota County Solid Waste Operations staff to ensure that the system is in good working order.

9. The exposed exterior of all above ground tanks are inspected weekly by Sarasota County Solid Waste Operations staff for the adequacy of the leak detection system and corrosion and maintenance deficiencies. Interior inspection of the tanks are performed whenever the tank is drained or at a minimum of every three years. If the inspection reveals a tank or equipment deficiency, leak or any other deficiency, which could result in failure of the tank to contain the leachate, remedial measures are taken immediately to eliminate the leak or correct the deficiency. Inspection reports are maintained at the CCSWDC Administration Building and are available to the Department upon request for the lifetime of the liquid storage system.

Based on our inspections, I certify that the leachate storage tank system serving the MRF is maintained and operated by Meyer & Gabbert Excavating Contractors, Inc, and that the system is in good working order in keeping with the permit conditions, regulations and standard practices.

Sincerely,

P A Wingler

Paul A. Wingler, P.E.
Project Manager

cc: Frank Coggins, Manager, Solid Waste Operations
James Gabbert, Meyer & Gabbert Excavating Contractors, Inc.
Joe Miller, P.E., PBS&J - Orlando

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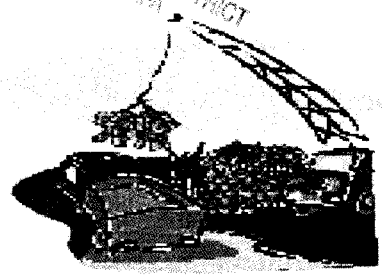
RENEWAL OF OPERATION PERMIT FOR

SARASOTA COUNTY

CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX

C&D RECYCLING AND CLASS III

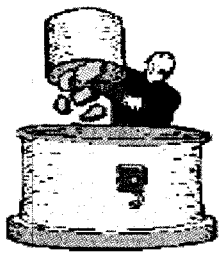
Material Recovery Facility



FDEP ID# 4058C02034

Prepared For:

SARASOTA COUNTY
ENVIRONMENTAL SERVICES
SOLID WASTE OPERATION
4000 KNIGHTS TRAIL ROAD
NOKOMIS, FLORIDA



Prepared By:

PBS&J
482 S Keller Road
Orlando, Florida 32810
Project # 120499.10
Revised
February 17, 2004

C&D Debris and Class III Materials Recovery Facility
Waste Processing Facility
Permit Application for Renewal of Operation Permit

Table of Contents

FIGURES

TABLES

APPENDICIES

Florida Department of Environmental Protection
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

DEP Form # 62-701.900(4)
Form Title Application to Construct, Operate or Modify a Waste Processing Facility
Effective Date 05-27-01

DEP Application No. _____
(Filled by DEP)

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR PERMIT TO CONSTRUCT, OPERATE OR MODIFY A WASTE PROCESSING FACILITY

GENERAL REQUIREMENT: Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes, (F.S.) and in accordance with Florida Administrative Code (F.A.C.) Chapter 62-701. A minimum of four copies of the application shall be submitted to the Department District Office having jurisdiction over the facility. The appropriate fee in accordance with Rule 62-701.315(4), F.A.C., shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP). Complete appropriate sections for the type of facility for which application is made and include all additional information, drawings, and reports necessary to evaluate the facility.

Please Type or Print in Ink

A. GENERAL INFORMATION

1. Type of facility (check all that apply):
   - [ ] Transfer Station
   - [✓] Materials Recovery Facility:
     - [✓] C&D Recycling
     - [✓] Class III MRF
     - [ ] MSW MRF
     - [✓] Other Describe: Waste screening, volume reduction, grinding and densification.
   - [ ] Volume Reduction Facility
     - [ ] Pulverizer/Shredder
     - [ ] Compactor/Baling
     - [ ] Other Describe: _____

NOTE: C&D Disposal facilities that also recycle C&D, shall apply on DEP FORM 62-701.900(6), F.A.C.

2. Type of application:
   - [ ] Construction/Operation
   - [✓] Operation Without Additional Construction

3. Classification of application:
   - [ ] New
   - [✓] Renewal
   - [ ] Substantial Modification
   - [ ] Intermediate Modification
   - [ ] Minor Modification

4. Facility name: Central County Solid Waste Disposal Complex

5. DEP ID number: 4058C02034 County: Sarasota

6. Facility location (main entrance): 4000 Knights Trail Road
   Nokomis, Florida 34275

7. Location coordinates:

   Section: 1-4 Township: 9-16 Range: 38S/19E

   UTMs: Zone 17 161.2 km E 315.5 km N

   Latitude: ____ ° ____ ' ____ " Longitude: ____ ° ____ ' ____ "

8. Applicant name (operating authority): Sarasota County

Mailing address: 4000 Knights Trail Road
Street or P.O. Box City State Zip

Contact person: Frank Coggins Telephone: (941) 861-1570

Title: Manager, Solid Waste Operations fcoggins@scgov.net
E-Mail address (if available)

9. Authorized agent/Consultant: PBS&J

Mailing address: 482 S Keller Road
Street or P.O. Box City State Zip

Contact person: Mr. Joe Miller Telephone: (407) 647-7275

Title: Project Manager jlmiller@pbsj.com
E-Mail address (if available)

10. Landowner(if different than applicant): N/A

Mailing address:
Street or P.O. Box City State Zip

Contact person: Telephone: ( )

E-Mail address (if available)

11. Cities, towns and areas to be served:

Sarasota County

12. Date site will be ready to be inspected for completion: N/A

13. Estimated costs:

Total Construction: $ N/A Closing Costs: $ N/A

14. Anticipated construction starting and completion dates:

From: N/A To:

15. Expected volume of waste to be received: N/A yds^3/day 200 tons/day

16. Provide a brief description of the operations planned for this facility:

This facility sorts and recovers construction and demolition debris and selected Class III materials for recycling.

B. ADDITIONAL INFORMATION

Please attach the following reports or documentation as required.

1. Provide a description of the solid waste that is proposed to be collected, stored, processed or disposed of by the facility, a projection of those waste types and quantities expected in future years, and the assumptions used to make the projections (Rule 62-701.710(2)(a), F.A.C.).

2. Attach a site plan, signed and sealed by a professional engineer registered under Chapter 471, F.S., with a scale not greater than 200 feet to the inch, which shows the facility location, total acreage of the site, and any other relevant features such as water bodies or wetlands on or within 200 feet of the site, potable water wells on or within 500 feet of the site and wells serving community water supplies on or within 1000 feet of the site (Rule 62-701.710(2)(b), F.A.C.).

3. Provide a description of the operation and functions of all processing equipment that will be used, with design criteria and expected performance. The description shall show the flow of solid waste and associated operations in detail, and shall include (Rule 62-701.710(2)(c), F.A.C.):
   a. Regular facility operations as they are expected to occur;
   b. Procedures for start up operations, and scheduled and unscheduled shut down operations; and
   c. Potential safety hazards and control methods, including fire detection and control.

4. Provide a description of the design requirements for the facility which demonstrate how the applicant will comply with Rule 62-701.710(3), F.A.C.

5. Provide a description of the loading, unloading, storage and processing areas (Rule 62-701.710(2)(d), F.A.C.).

6. Provide the identification and capacity of any on-site storage areas for recyclable materials, non-processable wastes, unauthorized wastes, and residues (Rule 62-701.710(2)(e), F.A.C.).

7. Provide a plan for disposal of unmarketable recyclable materials and residue, and for waste handling capability in the event of breakdowns in the operations or equipment (Rule 62-701.710(2)(f), F.A.C.).

8. Provide a boundary survey, legal description, and topographic survey of the property(Rule 62-701.710(2)(g), F.A.C.).

9. Provide an operation plan which describes how the applicant will comply with Rule 62-701.710(4), F.A.C. (Rule 62-701.710(2)(h), F.A.C.).

10. Provide a closure plan which describes generally how the applicant will comply with Rule 62-701.710(6), F.A.C. (Rule 62-701.710(2)(I). F.A.C.).

11. Unless exempted by Rule 62-701.710(10(a), F.A.C., provide the financial assurance documentation required by Rule 62-701.710(7), F.A.C. (Rule 62-701.710(2)(j), F.A.C.).

12. Provide documentation to show that stormwater will be controlled according to the requirements of Rule 62-701.710(8), F.A.C.

13. Provide documentation to show that the applicant will comply with the recordkeeping requirements of Rule 62-701.710(9), F.A.C.

APPLICATION PART B
ADDITIONAL INFORMATION REQUESTED BY APPLICATION ON PAGE 3 OF 4 WITH APPROPRIATE RESPONSES

The following reports or documents are attached as required:

B.1. Provide a description of the solid waste that is proposed to be collected, stored, processed or disposed of by the facility, a projection of those waste types and quantities expected in future years, and the assumptions used to make the projections.

Response: See Section 3.1.0 Process Flow Narrative.

B.2. Attach a site plan, signed and sealed by a professional engineer registered under Chapter 471, F.S., with a scale not greater than 200 feet to the inch, which shows the facility location, total acreage of the site, and any other relevant features such as water bodies or wetlands on or within 200 feet of the site, potable water wells on or within 500 feet of the site and wells serving community water supplies on or within 1000 feet of the site.

Response: This is an existing MRF permitted in 1998. A pocket has been provided with this application for insertion of the record drawings. The MRF location has not changed. The MRF is located within the boundary of the Central County Solid Waste Disposal Complex (CCSWDC). A MRF location map is included at the end of Section 2. CCSWDC is a 550-acre site located within the Pine Land Reserves, which is approximately 6,150-acres. The MRF is located on a 570-ft. by 750-ft. area, which is approximately 9.81 acres. There are no community water supplies on or within 1000-feet of the site. There is a potable water well located 500-feet east of the MRF as shown on the original site plan drawing entitled "Site Plan – C&D Recycling Facility Solid Waste Management – Sarasota County Landfill," prepared by Weber Engineering & Surveying, Inc. As shown on the site plans for CCSWDC, there are wetlands located within 200-feet of the MRF, which has an impervious surface for processing waste with a leachate collection and disposal system as protection for the wetlands.

B.3. Provide a description of the operation and functions of all processing equipment that will be used, with design criteria and expected performance. The description shows the flow of solid waste and associated operations in detail, and includes:

a. Regular facility operations as they are expected to occur;
b. Procedures for start up operations, and scheduled and unscheduled shut down operations; and

c. Potential safety hazards and control methods, including fire detection and control.

Response: See Section 3.1.0 - Process Flow Narrative, Appendix B – Hazardous Waste Contingency Plan and Appendix D Operations Contingency Plan.

B.4. Provide a description of the design requirements for the facility that demonstrates how the applicant will comply with Rule 62-701.710(3), F.A.C.

Response: Per 62-701.710(3):

The MRF design is described in Section 3.1.0, and is further described as follows.

(a) Tipping, processing, sorting, storage and compaction areas are in covered areas with open sides for ventilation or in open areas. The MRF has a perimeter fence for security and liter control. The MRF is located within the boundaries of the Central County Solid Waste Disposal Complex (CCSWDC). The CCSWDC has visual screening. Since the MRF is located within the visual screening for the CCSWDC, there is no visual screening around the MRF. No additional visual screening is considered necessary.

(b) The MRF has a leachate control system, which is further described in Section 3.3.0 Leachate Control Narrative, that consists of a concrete pad sloped to trench drains to prevent discharge of leachate and mixing of leachate with storm water, and to minimize the presence of standing water.

(c) Provisions are made for evaluating the quantity of all incoming solid waste and recovered materials by weighing the incoming and recovered materials on the CCSWDC scales, which are located at the entrance to the CCSWDC. Storage areas are designed to hold the expected volume of materials until they are transferred for disposal or recycling. In Section 3, the storage areas and sizes are shown on Figure 3-2, and the storage area capacities are calculated in Table 3-1. Table 3-1 also calculates the number of working days to reach capacity based on the average anticipated amount of waste per day. Recycled material is marketed according to a schedule that varies as to the market demand. If storage on-site for recycled materials is at capacity, incoming waste is diverted to the on-site Class I Landfill for disposal. Closure costs for financial assurance is for the maximum storage capacities calculated in Table 3-1. Closure cost calculation can be found in Section 3.7.0.

B.5. Provide a description of the loading, unloading, storage and processing areas.

Response: A description of the loading, unloading, storage and processing areas can be found in Section 3.1.0 – Process Flow Narrative, 3.4.0 – Load Rejection Policy and 3.5.0 – Waste Screening.

B.6. Provide the identification and capacity of any on-site storage areas for recyclable materials, non-processable wastes, unauthorized wastes, and residues.

Response: See Section 3 Figure 3-2, which shows the onsite storage areas for recyclable materials, non-processable wastes, unauthorized wastes, and residues. The storage area capacities are shown in Section 3 on Table 3-1.

B.7. Provide a plan for disposal of unmarketable recyclable materials and residue, and for waste handling capability in the event of breakdowns in the operations or equipment.

Response: Unmarketable recyclable materials and residue from the MRF is disposed of at the Waste Management Gulf Coast Landfill. The letter of acceptance is included in Appendix I. In the event of breakdowns in the operations or equipment such that waste cannot be processed, the MRF will bypass all incoming waste to the on-site Class I Landfill until the MRF is repaired in the case of damage or destroyed buildings (including roof structure over leachate containment area).

B.8. Provide a boundary survey, legal description, and topographic survey of the property.

Response: This is an existing MRF permitted in 1998. The MRF location has not changed. The MRF is located within the boundary of the Central County Solid Waste Disposal Complex (CCSWDC). A MRF location map is included with Section 2 as Figure 2-1. CCSWDC is a 550-acre site located within the Pine Land Reserves, which is approximately 6,150-acres. Figure 2-2 shows the Pine Land Reserve. The MRF is located on a 570-ft. by 750-ft. area, which is approximately 9.81 acres. Figure 3-2 shows the layout of CCSWDC with the location of the MRF. There is no separate boundary survey or legal description for the MRF.

B.9. Provide an operation plan that describes how the applicant will comply with Rule 62-701.710(4), F.A.C.

Response: See Section 3 Operations and Maintenance Manual.

B.10. Provide a closure plan that describes generally how the applicant will comply with Rule 62-701.710(6).

Response: See Section 3.7.0 Closure Plan and Closure Cost Estimate.

B.11. Unless exempted by Rule 62-701.710 (10(a)), F.A.C., the financial assurance documentation required by Rule 62-701.710(7), F.A.C.

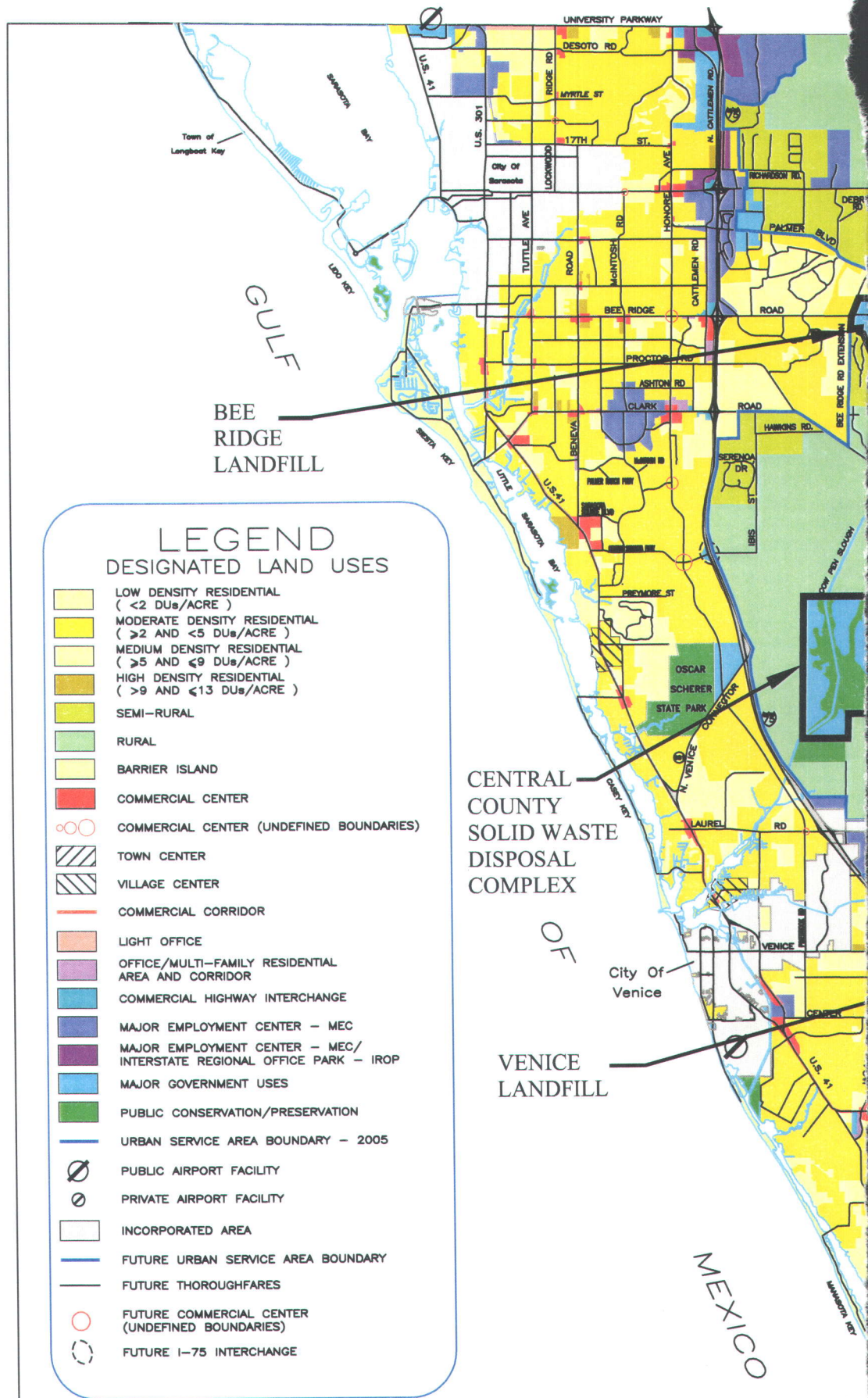
Response: The closure cost estimate is included in Section 3.7.0 Closure Plan and Closure Cost Estimate. Financial assurance for the MRF is included with the financial assurance for the Central County Solid Waste Disposal Complex Landfill Operation Permit. No separate financial assurance document is required for the MRF.

B.12. Provide documentation to show that stormwater will be controlled according to the requirements of Rule 62-701.710(8), F.A.C.

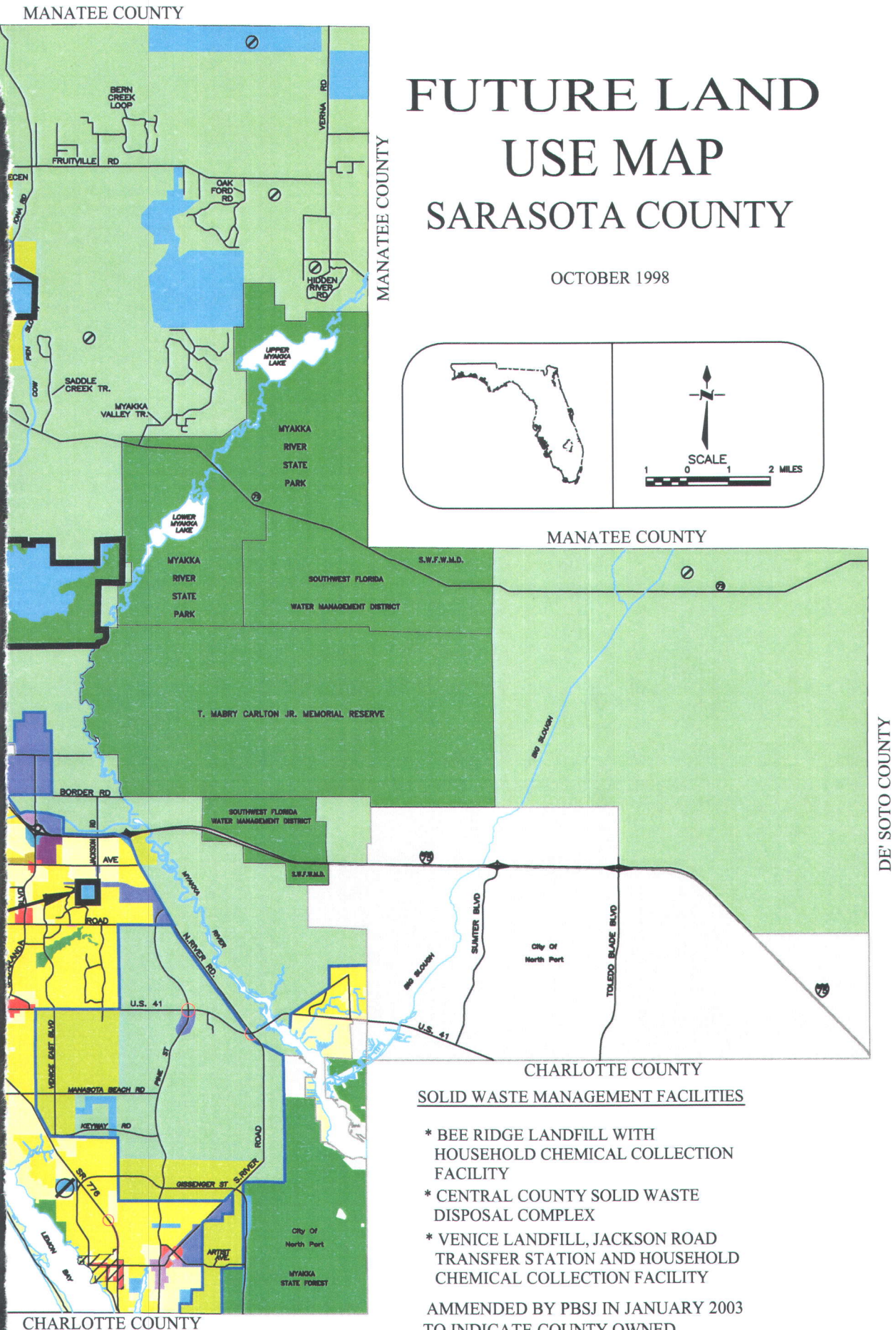
Response: Storm water is controlled according to the requirements of Rule 62-701.710(8). Storm water run-off from the MRF flows into a perimeter ditch, which drains into the storm water management system for the Central County Solid Waste Disposal Complex (CCSWDC). The Southwest Florida Water Management District (SWFWMD) permitted the storm water management system for CCSWDC by giving the facility the Management and Storage of Surface Waters (MSSW) Permit Number 407932.01, issued August 24, 1993. Other related permits for CCSWDC include the Environmental Resource Permit (EPR) Number 407932.01, and the Multi-Sector NPDES Permit Number FLR05F499 with expiration date of May 19, 2007. The perimeter ditch was inspected. The system is functioning as designed to remove the storm water from the MRF, and direct it into the storm water management system for CCSWDC.

B.13. A document that shows the applicant will comply with the recordkeeping requirements of Rule 62-701.710(9), F.A.C.

Response: The applicant will comply with the recordkeeping requirements of Rule 62-701.710(9) Recordkeeping. Recordkeeping is further documented in Section 3.8.0 Recordkeeping.



PBS&J



FUTURE LAND USE MAP

SARASOTA COUNTY

OCTOBER 1998

SOLID WASTE MANAGEMENT FACILITIES

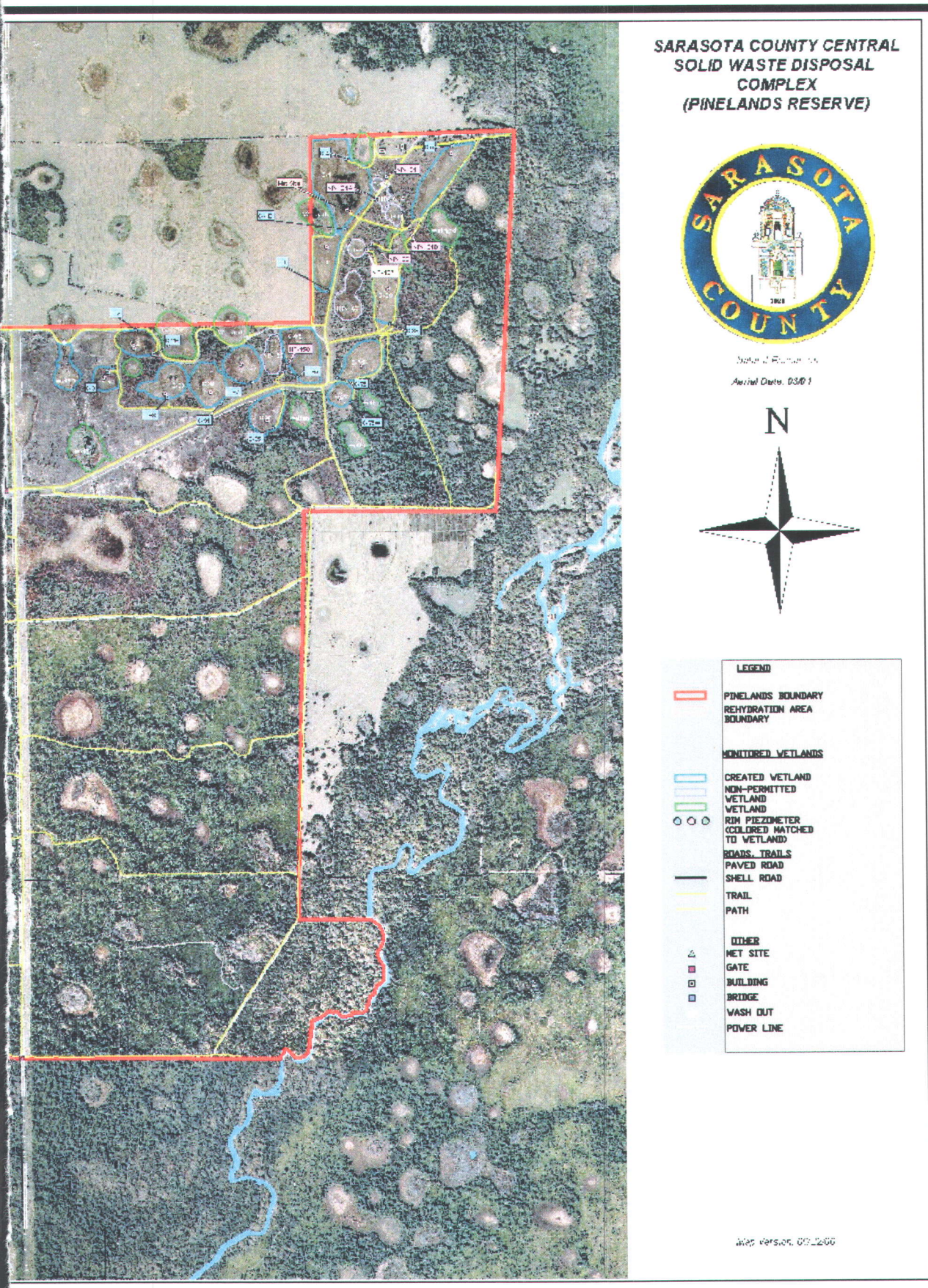
* BEE RIDGE LANDFILL WITH HOUSEHOLD CHEMICAL COLLECTION FACILITY
* CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX
* VENICE LANDFILL, JACKSON ROAD TRANSFER STATION AND HOUSEHOLD CHEMICAL COLLECTION FACILITY

AMMENDED BY PBSJ IN JANUARY 2003 TO INDICATE COUNTY OWNED SOLID WASTE MANAGEMENT FACILITIES

FIGURE 2-1

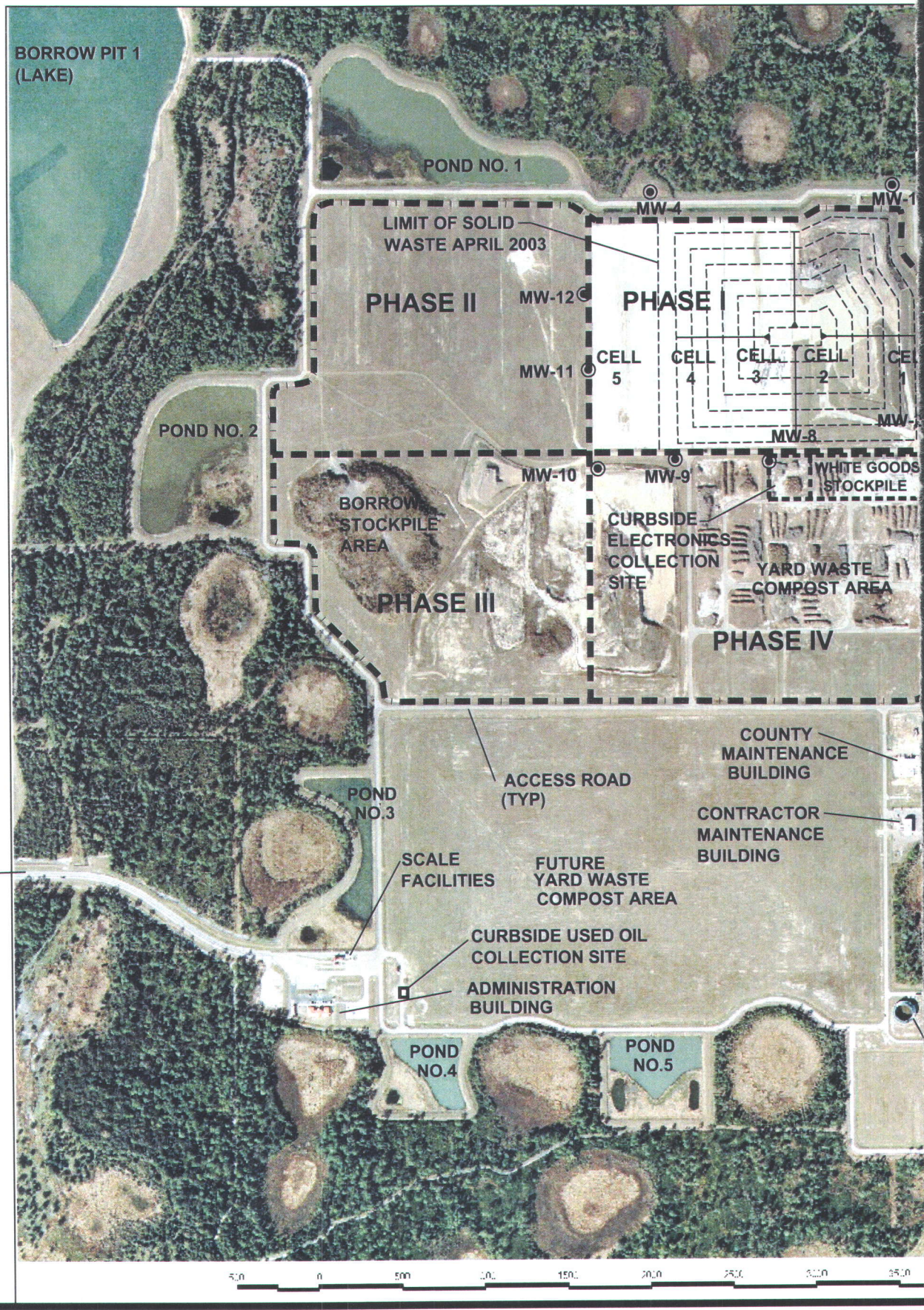
PBS&J

SARASO
CENTRAL COUNTY SOLID
FACILITY
JANU



TA COUNTY
WASTE DISPOSAL COMPLEX
SITE PLAN
ARY 2003

FIGURE 2-2



PBS&J

SARASO
CENTRAL COUNTY SOLID
FACILITY
JANU

SARASOTA COUNTY CENTRAL SOLID WASTE DISPOSAL COMPLEX

Aerial Date: 03/01

N

MW-3 GROUNDWATER MONITORING WELL

LIMITS OF CLASS I LANDFILL DIVIDED INTO 5 PHASES

FLORIDA POWER & LIGHT EASEMENT

TA COUNTY
WASTE DISPOSAL COMPLEX
SITE PLAN
ARY 2003

FIGURE 2-3

Section 3

OPERATIONS AND MAINTENANCE MANUAL

FOR THE

SARASOTA COUNTY

CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX

WASTE PROCESSING FACILITY

MATERIALS RECOVERY FACILITY

C& D RECYLING & CLASS III

MRF

Sarasota Central County Solid Waste Disposal Complex
4000 Knights Trail Road
Nokomis, Florida 34275

Revised February 17, 2004

By
PBS&J
482 South Keller Road
Orlando, Florida 32810
407.467.7275

Project # 120499.10

Central County Solid Waste Disposal Complex
Waste Processing Facility Materials Recovery Facility
Operations and Maintenance Manual

Table of Contents

3.1.0 Process Flow Narrative

This site is classified as a Waste Processing Facility in the category of Materials Recovery Facility (MRF) for sorting and recovery of construction and demolition debris and a selected Class III material for recycling. The selected Class III material (Carpet padding only) is removed in the process of construction and demolition projects and is included with the construction and demolition debris. This selected Class III material is received because it can be recycled economically, and kept out of landfills. This helps Sarasota County meet the State of Florida recycling goals. The MRF was constructed and is operated in accordance with all applicable requirements of Chapters 62-701 of the Florida Administrative Code. The MRF is owned and operated by Sarasota County through a contract with Meyer & Gabbert Excavating Contractors Inc.

Customers arriving at the CCSWDC hauling construction and demolition debris (C&D) or C&D with carpet padding enter the scales, pay the appropriate charge, receive a scalehouse ticket and are directed to the MRF.

Customers arriving at the MRF present the scalehouse ticket to the attendant. The customer is questioned regarding the load contents. The on-site manager or a spotter is notified if a load is suspected of containing unacceptable materials. All loads are inspected as described in Section 3.5.0 Waste Screening.

The materials flow schematic is shown on Figure 3-1. The process, containment areas and leachate flow schematic is shown on Figure 3-2. The storage area capacities, schedule of removal of materials and cleaning are shown in Table 3-1. Appendix I includes the list of facilities accepting waste and recyclable materials.

Table 3-2 is a projection of waste types and quantities expected. The projections are based on the actual waste types and quantities received in the past, which are also included in Table 3-2. Waste is weighed on a scale so the amount is reported in tons. The supporting documents related to the expected volume of waste to be received are the actual amounts received in the past. Over the last five years, the annual volume has ranged between 55,000 and 60,000 tons per year. Based on receiving and processing waste 312 days per year, the average has ranged between 176 and 192 tons per day. The amount reported is an expected average of 200 tons per day based on working 312 days per year.

3.1.1 Concrete

Customers with loads of clean concrete are directed to the clean concrete processing, storage and loading area. Clean concrete is defined as only uncontaminated concrete with diminimus amounts of soil. The load is dumped in the unloading area as shown on Figure 3-2. Once an adequate volume of material has been stockpiled, the clean concrete is processed using a densifier (Model MDG 50 through MDG 600 as required) and then a crusher (Portable UltraMax 1200-25CC Closed-Circuit Crushing & Screening Combo Plant). The processed concrete is then stockpiled for market as shown on Figure 3-2. The amount of clean concrete stockpiled for market will vary.

3.1.2 Wood

Customers with loads of clean wood are directed to the clean wood unloading and processing area as shown on Figure 3-2. Clean wood means wood, including lumber, tree and shrub trunks, branches, and limbs, which is free of paint, glue, filler, penthachlorophenol, creosote, tar, asphalt, other wood preservatives or treatments. The clean wood loads may include diminimus amounts of soil. The load is dumped in the unloading area as shown on Figure 3-2. Once an adequate volume of material has been stockpiled, the clean wood is processed using a grinder (Morbark Wood Hog #7600 or Maxigrind 460-6 if needed as a reserve unit) to produce mulch. The mulch is then stockpiled for market as shown on Figure 3-2. The amount of mulch stockpiled for market will vary.

Customers with loads of recyclable wood are directed to the unloading area on the leachate containment pad as shown on Figure 3-2. Recyclable wood is defined as wood other than clean wood with diminimus amounts of soil. The load is dumped in the unloading area. Once an adequate volume of material has been stockpiled, the recyclable wood is processed using a grinder (Morbark Wood Hog #7600 or Maxigrind 460-6 if needed as a reserve unit) to produce fuel. The fuel is then stockpiled for market in the storage area on the leachate containment pad as shown on Figure 3-2. The amount of fuel stockpiled for market will vary.

3.1.3 Mixed Loads

Under direction of the spotter, customers with mixed loads proceed to the unloading area on the leachate containment pad identified on Figure 3-2. Mixed loads are defined as construction and demolition debris, which may include carpet padding, whose source is construction and demolition projects where waste from the project is disposed of in a single container resulting in "mixed loads" or "mixed waste." This is as opposed to construction and demolition projects where the waste is sorted on site by material type, or the project is the type that produces a single type of waste, such as, concrete, wood or asphalt. The mixed load is dumped on the unloading area for sorting. Unacceptable materials will be reloaded and the customer directed to other on-site facilities for disposal.

The mixed load C&D debris, including the selected Class III Material (Carpet padding only), is then sorted, separated and recyclable materials removed from the mixed load. Materials that cannot be recycled are removed from the load for disposal.

Remaining C&D material will be temporarily stockpiled within the leachate containment pad as shown on Figure 3-2 prior to the screening operation. When an adequate amount of material has been stockpiled as shown on Figure 3-2, the material will be loaded onto the screen (Read Screen-All CV-150-D). The minus 2" material screenings will be transported to the on-site Class I landfill working face for use as initial cover. The screen rejects will be loaded into transport trucks within the leachate containment area and disposed of at a landfill as listed in Appendix I.

Roofing shingles may be sorted, put through the grinder (Maxigrind 460-6) and may be used for initial cover at the on-site Class I Landfill subject to FDEP permit approval through the landfill operation permit, or disposed of in the on-site Class I Landfill.

3.1.4 Class I Waste Materials

Class I waste materials are as defined in 62-701.200 Definitions (1) "Class I waste." Class I waste is manually removed. Class I waste materials are loaded into the 8 CY dumpster located on the leachate containment area as shown on Figure 3-2. The Franchised Hauler transports the Class I waste to the on-site Class I Landfill for disposal twice a week on Wednesdays and Saturdays. Temporary storage of non-recyclable materials is performed in accordance with Rule 62-701.710(4)(b), FAC. Specifically, putrescible waste is removed when the container is full or every 48 hours except on weekends and holidays, and non-putrescible waste will not be stored for longer than 30 days.

3.1.5 Recyclables

Recyclables removed during the sorting step will be stockpiled as shown on Figure 3-2. The type of recyclable material, location, size of storage area, or container sizes are also shown on Figure 3-2. These recyclable materials are clean cardboard and clean metals. Clean is defined as materials that may contain diminimus amounts of waste included inadvertently. The processing areas are under cover. Cardboard is stored in a bin, and steel in a trailer. A roll-off container for metals is used to transfer metals removed during sorting to the processing and storage area. All recyclables other than those designated on Figure 3-2, will remain on the leachate containment pad until transported to market.

Recyclable materials will be transported via truck for market delivery. Material transported off-site is weighed at the scales enroute to market.

3.1.6 Special Wastes

If unacceptable materials are encountered involving hazardous wastes (e.g. car batteries, thermostats, paint, etc.) the hazardous waste contingency plan in Appendix B will be implemented. Electronic waste and miscellaneous hazardous waste will be stored in a Rubbermaid Plastic Storage Cabinet. Hazardous waste will be stored in polyethylene trays as specified in Appendix F. The storage cabinet is on the leachate containment pad and under roof. Car batteries will be stored in an aluminum cabinet located on the leachate containment pad and under roof. The batteries will be stored on poly drip decks as specified in Appendix F.

3.1.7 Litter

Litter shall be collected daily on operating days. Laborers will police the site and manually or mechanically collect any litter found on the site. The litter will be placed in plastic garbage bags, which will be disposed of in the Class I waste 8 CY dumpster located as shown on Figure 3-2.

3.1.8 Fire Protection and Controls

Adequate fire protection is available at all times and is provided by the Sarasota County Fire Department, who annually inspects the MRF. A copy of the inspection report is filed with FDEP, and a copy is kept on-site in the office. The MRF will continue to have an annual fire inspection in November or December of each year. Appendix J includes the latest Fire Safety Inspection Report.

The MRF has fire extinguishers at locations approved by the Fire Department. The MRF also has a water supply system throughout the MRF. There is a 3" diameter PVC pipe with quick coupler hose adapters and nozzles located at 250-foot grid pattern throughout the MRF. Meyer & Gabbert also have a mobile 2,500-gallon water truck on site that can be used to put water on a fire. In case of fire, employees are instructed to dial 911, and report the fire.

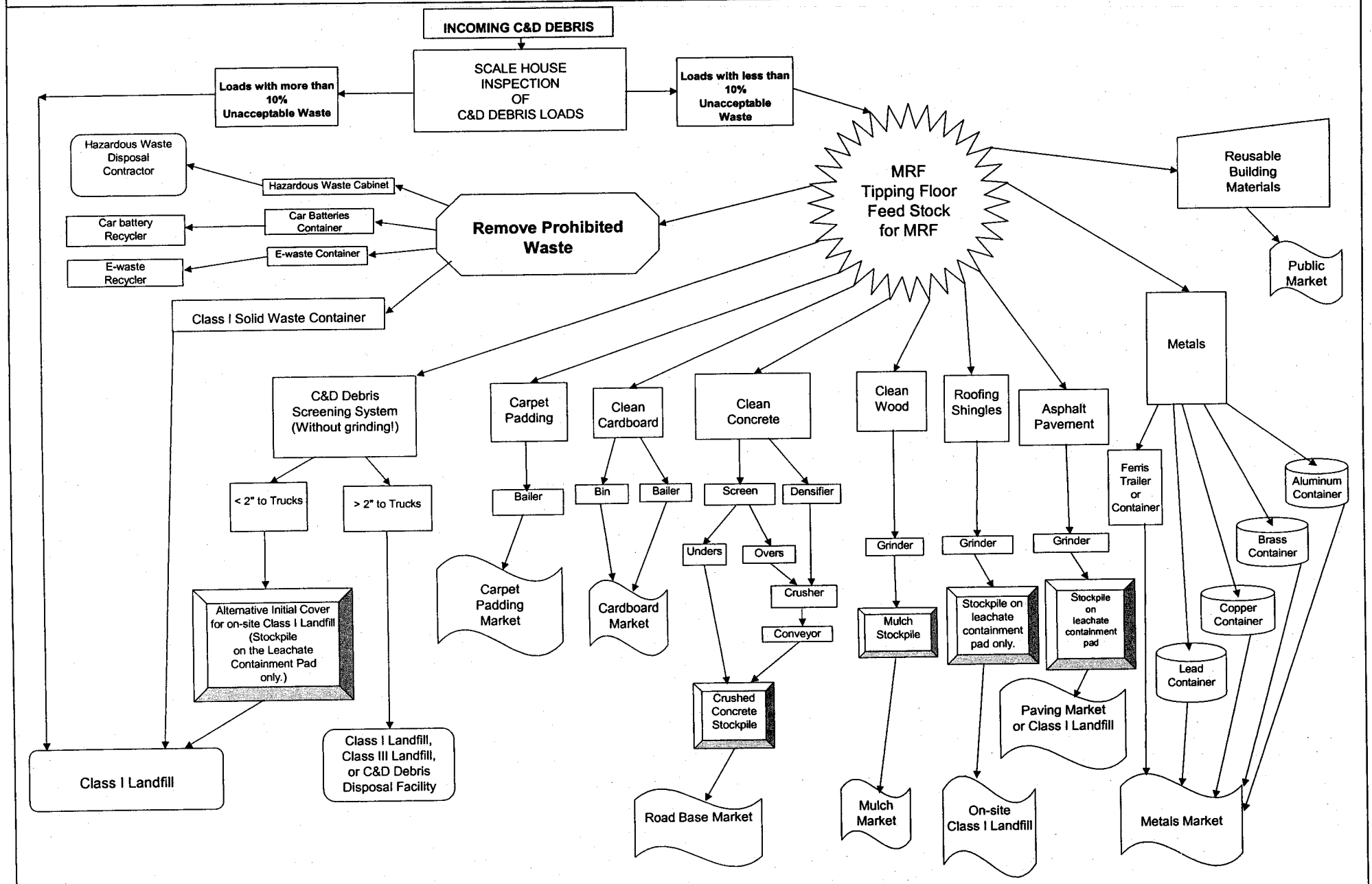
3.1.9 Waste and Recyclable Removal and Cleaning Schedule

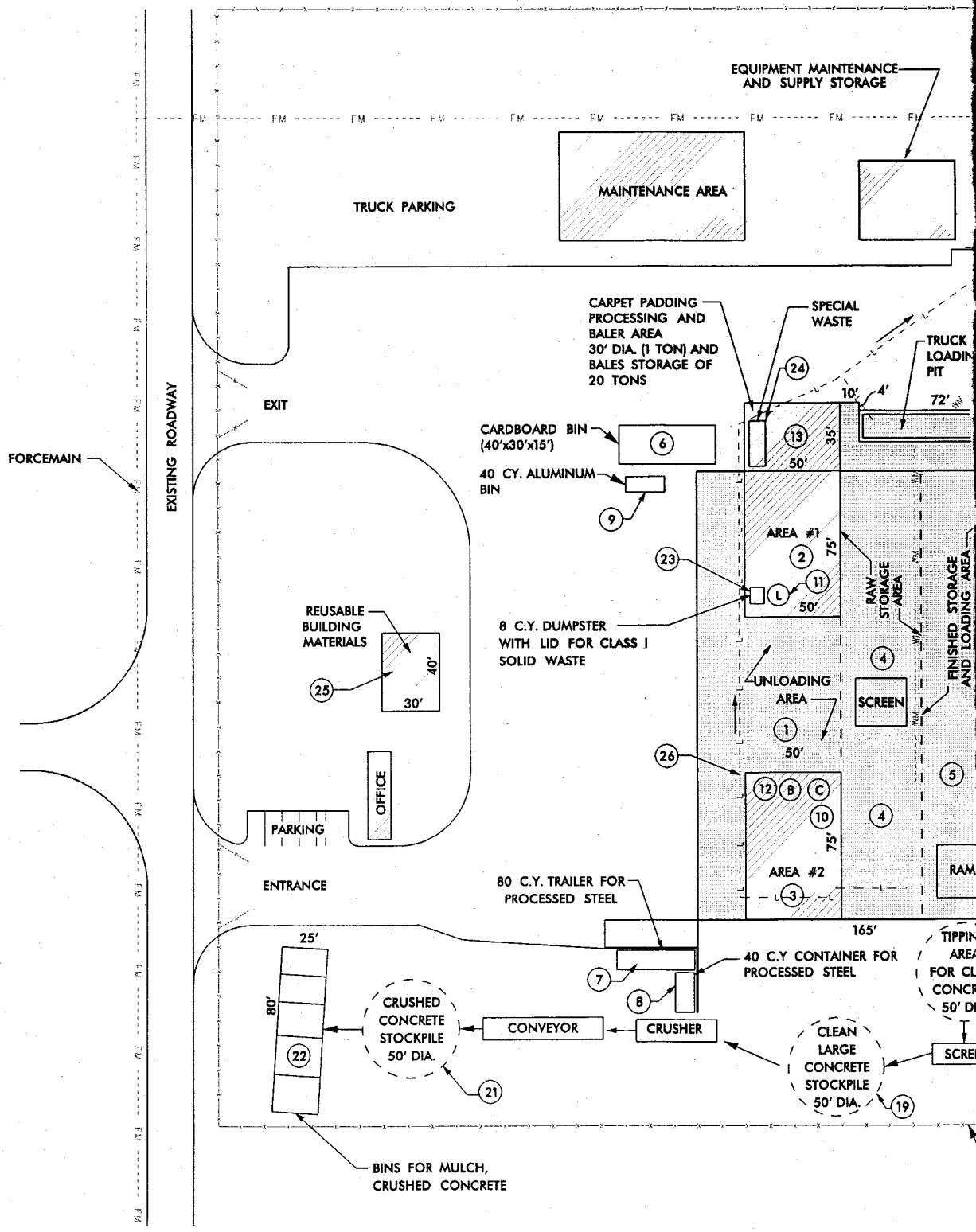
The waste and recyclables removal and cleaning schedule is shown on Table 3-1. The Franchised Hauler empties the Class I dumpster as shown on Figure 3-2 twice a week on Wednesdays and Saturdays. The trench drains and leachate collection system as shown on Figure 3-2 are checked and cleaned once a week on Mondays and also after a rainstorm. The processing slab is cleaned with a rubber bucket edge at the end of each day and after material is loaded into a truck for shipping. Process residuals and rejects are removed daily. Recyclable materials are removed when they can be sold or taken to market, or at least annually. Hazardous waste is removed when the storage cabinet is full or at least monthly.

FIGURE 3-1

Sarasota County Central County Solid Waste Disposal Complex

MRF Materials Flow Schematic





CENTRAL COUNTY
SOLID WASTE DISPOSAL COMPLEX
C&D RECYCLING AND CLASS III MRF

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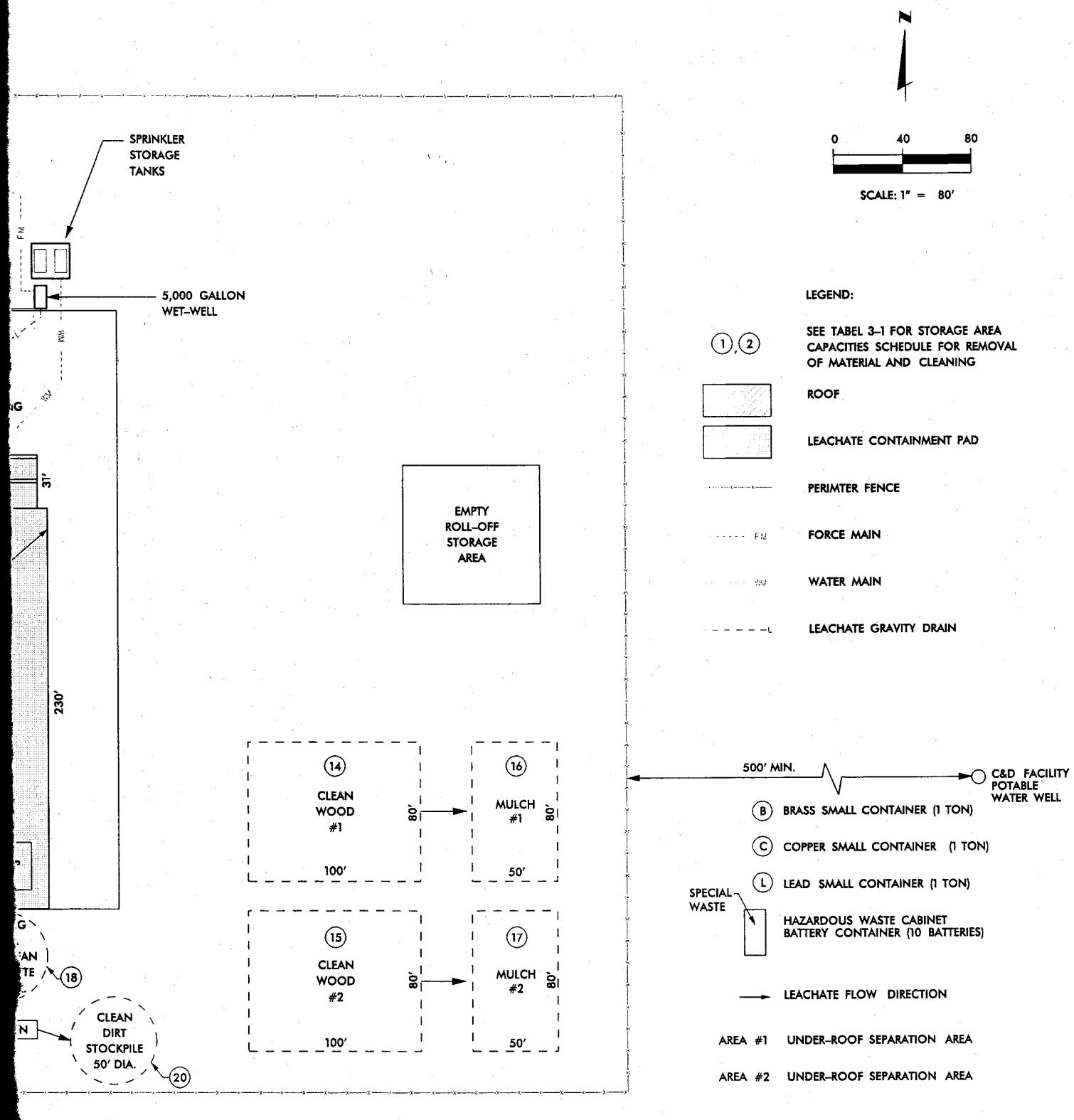


REV. FEB. 6, 2004
ORIGINAL OCTOBER 6, 2003

PROCESS AND LEACHATE FLOW SCHEMATIC

FIGURE 3-2

Sarasota County Central County Solid Waste Disposal Complex

Table 3-1

MRF Storage Area Capacities, Schedule for Removal of Material and Cleaning

Area # Note 1	Material	Schedule for Removal of Materials	Storage Area Capacities									
			Schedule for Cleaning	Diameter Feet	Width Feet	Length Feet	Height Feet	Volume CY	Density Pounds/CY	Storage Weight Tons	Storage Time Days
1	Mixed C&D Debris in Unloading Area	At least daily	At least daily.		50	75	15	2,083	735	766	4
2	Under Roof Separation Area #1	At least daily	At least daily		50	75	15	2,083	735	766	4
3	Under Roof Separation Area #2	At least daily	At least daily		50	75	15	2,083	735	766	4
4	Raw Storage Area	At least twice a week	At least twice a week		35	225	15	4,375	735	1,608	8
5	Finished Storage and Loading Area	At least twice a week	At least twice a week		35	225	15	4,375	735	1,608	8
6	Clean Cardboard	At least annually	At least annually		30	40	15	667	250	83	60
7	Clean Processed Steel Trailer	At least annually	At least annually		7	44	7	80	400	16	4
8	Clean Processed Steel Roll-off Container	At least annually	At least annually		10	20	5.4	40	400	8	8
9	Aluminum in Small Container	At least annually	At least annually		10	20	5.4	40	200	4	12
10	Copper in Small Container	At least annually	At least annually					5	400	1	30
11	Lead in Small Container	At least annually	At least annually					5	400	1	30
12	Brass in Small Container	At least annually	At least annually					5	400	1	30
13	Carpet Padding Area	At least annually	At least monthly		30	30	15	500	735	184	90
14	Tipping Area 1 for Clean Wood	At least annually	At least annually		80	100	15	4,444	225	500	120
15	Tipping Area 2 for Clean Wood	At least annually	At least annually		80	100	15	4,444	225	500	120
16	Mulch Pile 1	At least annually	At least annually		50	80	15	2,222	450	500	120
17	Mulch Pile 2	At least annually	At least annually		50	80	15	2,222	450	500	120
18	Tipping Area for Clean Concrete or asphalt	At least annually	At least annually	50			15	1,090	1,110	605	24
19	Stockpile for Clean Large Concrete	At least annually	At least annually	50			15	1,090	1,110	605	24
20	Stockpile for Clean Dirt	At least annually	At least annually	50			15	1,090	2,000	1,090	60
21	Stockpile for crushed clean concrete	At least annually	At least annually	50			15	1,090	1,110	605	24
22	Bins for mulch, crushed concrete	At least annually	At least annually		25	80	15	1,111	1,110	617	24
23	8 CY dumpster for Class I Waste	At least twice a week	At least monthly					8	250	1	2
24	Special Waste	At least monthly	At least monthly					4	500	1	30
25	Reusable Building Materials in Building	At least annually	At least annually		30	40	10	444	200	44	180
26	Trench Drains & leachate collection	At least weekly	At least weekly								

Total	35,604	11,379
Expected average tonnage per day		200
Number of days of storage calculated by dividing total tons by average tons per day		57

Notes:

1. The material storage areas are shown on Figure 3-2.
2. The purpose of this calculation is to estimate the storage area capacities for calculating the closure cost.
3. The actual height of piles will vary between 0-feet and 15-feet.

Sarasota County Central County Solid Waste Disposal Complex
Material Recovery Facility

Table 3-2
Waste and Recyclable Materials Projections

Fiscal Year Ending Sept. 30	Incoming Waste Tons	Landfilled Tons	Mulch Tons	Fuel Tons	Concrete Tons	Asphalt	Metals Tons	Aluminum Tons	Cardboard Tons	Miscellaneous Tons	Carpet Padding Tons	Landfill Cover Tons
2004	62,000	22,000	500	500	8,000	300	1,500	100	300	50	100	28,650
2005	64,000	22,500	515	515	8,240	400	1,545	103	309	52	103	29,719
2006	66,000	23,000	530	530	8,487	500	1,591	106	318	53	106	30,777
2007	68,000	23,500	546	546	8,742	600	1,639	109	328	55	109	31,825
2008	70,000	24,000	563	563	9,004	700	1,688	113	338	56	113	32,863

Note! Projections are based on the waste received and processed over the past five years.

3.2.0 MRF Signs and Fliers

The MRF has signs installed on-site to notify all haulers about the site operation. This includes entrance and exit signs. A general welcome sign is located at the entrance to the MRF. A hauler notification sign is located at the office ticket window to notify all haulers about the acceptable and non-acceptable materials. The load rejection policy is included on this sign. This sign and flyer is shown on Figure 3-3.

Figure 3-3. MRF Flyer and Sign

Meyer & Gabbert Recycling
Materials Recovery Facility For Construction and Demolition Debris
and Selected Class III Material (Carpet padding only)

Hours of Operation: Monday - Saturday 8:00am - 5:00pm
Sunday CLOSED

WASTES ACCEPTED

(Waste accepted must come from a construction or demolition project!!!!)

STEEL	GLASS	BRICK
CONCRETE	ASPHALT	PIPE
GYPSUM WALLBOARD	LUMBER	ROCK & SOIL
PALLETS	CARDBOARD	PAPER
CARPET PADDING	WOOD	METAL SCRAP
SHINGLES	PLASTICS	ALUMINUM

WASTES NOT ACCEPTED

HOUSEHOLD GARBAGE	HAZARDOUS WASTE
BIOMEDICAL WASTE	INDUSTRIAL WASTE
BATTERIES	TIRES
FLOURESCENT LIGHT BULBS & BALLAST	ASBESTOS
WHITE GOODS	PAINT
LOADS EXCLUSIVELY CONTAINING SOIL	OIL CONTAINERS
CONTAMINATED SOIL	LIQUIDS
ELECTRONIC DEVICES (COMPUTERS, TVs, ETC.)	EXCAVATED WASTE

ALL VEHICLES WILL BE INSPECTED PRIOR TO TIPPING. IF MORE THAN 10% OF THE LOAD CONTAINS UNACCEPTABLE WASTE, TIPPING WILL BE DENIED. AFTER TIPPING, IF ANY UNACCEPTABLE WASTES ARE DISCOVERED, THEY MAY BE RETURNED TO THE HAULER FOR DISPOSAL AT A PROPERLY PERMITTED FACILITY.

3.3.0 Leachate Control Narrative

The leachate containment area is designed to collect the leachate that may be within a load or generated by a rain event. The entire leachate containment area is poured concrete and is sloped to drain into the collection system. The flow schematic is shown on Figure 3-2.

Appendix A includes the supporting calculations that indicate that the leachate control system will prevent the discharge of leachate, and will minimize the presence of standing water. The concrete pad for leachate collection is sloped to the leachate collection drains.

Liquid within the containment area flows by gravity to the trench drains. The trench drains are 12-inch wide rectangular concrete channels 85 feet in length. These drains are covered with a traffic-bearing grate as shown on the drawings.

Leachate flows from the trench drains into a 15-inch diameter HDPE pipe. This pipe conveys the leachate from the containment area to the wet well as shown on the drawings.

Leachate then enters the 5,000 gallon wet well/separator box. The separator section of the box has a 1,250-gallon capacity and is used to remove solids and reduce turbidity. The separator section is inspected weekly to ensure that the accumulation of solids and sediment settled out of the raw leachate discharge from the containment area do not restrict flow into the wet well section of the box. Accumulated solids are removed weekly, and sediment as needed.

Leachate then flows into the wet well pump station. The pump station has a 3,750-gallon capacity and contains two pumps, pump number one and pump number two.

Pump number one is used to discharge leachate to the four inch diameter force main that connects the wet well/separator box to the six inch diameter force main that conveys leachate from the Class I area to the leachate storage tank as shown on the drawings. A backflow prevention valve prevents leachate from the leachate force main from entering the wet well pump station. All leachate discharged to the leachate force main is recorded by a flowmeter installed in the four inch diameter discharge force main. This information is recorded daily and included with the leachate reports for the landfill.

Pump number two is used to transfer leachate to the sprinkler water storage facility. The sprinkler water storage facility consists of two interconnected 5,000-gallon tanks. These tanks are located within secondary containment as shown on the drawings. This tank system conforms to the requirements of Rule 62-701.400(6)(c) FAC as follows:

- The tanks are constructed of concrete, the foundation is well drained (two feet above the seasonal high groundwater level) and stable (an eight inch reinforced concrete slab);
- The interior of the tanks consist of a material resistant to the liquid being stored;
- Secondary containment is provided to hold 110 percent of the total volume of the interconnected tanks;
- The secondary containment system is constructed of a material compatible with the liquid being stored and is coated with a corrosion resistant coating;
- Stormwater from within the sediment containment area will be pumped to the site's stormwater system using a portable pump within 24 hours of a precipitation event or when 10 percent of the storage capacity is reached is indicated by the alarm float;

- The system is equipped with an overfill prevention system and is inspected weekly; and,
- Inspections of this system are in accordance with Rule 62-701.400(6)(c) 8. and 9. FAC. The overfill control equipment shall be inspected weekly by the MRF operator to ensure it is in good working order. The exposed exterior of all above ground tanks shall be inspected weekly by the MRF operator for adequacy of the cathodic protection system, leaks, corrosion and maintenance deficiencies. Interior inspection of tanks shall be performed whenever the tank is drained or at a minimum of every three years. Record shall be kept of these inspections.

Pump number three supplies leachate from the sprinkler water storage facility for use as dust control during operations within the leachate containment area. The leachate is conveyed by a three-inch diameter, Sch 40 PVC pipe. This liquid is used for dust control prior to and during screening or grinding operations within the leachate control area. A hose will manually apply this dust control liquid with a spray nozzle directed to prevent overspray.

If the sprinkler storage facility is at maximum capacity and more leachate enters the wet well pump station, the leachate pump (pump number one) will activate. Pump number one, a Hydromatic SPGH500 will pump the leachate through a flow meter as shown on the drawings.

As shown on the drawings, pump number two may operate in series with pump number one or may be used as a backup to pump number one. At the end of each operating day and at other times if necessary, the valves will be reset manually to allow pump number two to discharge to the sprinkler water storage facility.

3.4.0 Load Rejection Policy

The following language is excerpted from the existing contract between Sarasota County Government and the MRF operator. It describes the load rejection policy.

The County will make the sole determination of load content and will direct C&D Debris deliveries to the Recycling Facility. Contractor must accept all C&D Debris except as provided in Section 5.3.19.7 and Articles 16 and 17 of the contract.

The Contractor determines that there is too much mixed Solid Waste or non-recyclable material in a load delivered to its Recycling Facility. Contractor may appeal to the County by contacting the Director and requesting a re-inspection of the load. In practice, a landfill employee of the County will be authorized to work with the Contractor to make the determination of loads that should be re-directed to the County Landfill, the Director shall initial the scale ticket and the driver will be required to return to the scale house to re-weigh the load and pay the appropriate tipping fee for disposal of the re-directed load. All costs of redirecting loads, reloading loads and alternative disposal of loads shall be borne by the hauler. If a load is dumped at the Recycling Facility and the County agrees with the Contractor that the load should not be accepted at the Recycling Facility, or the load is prohibited from being delivered or accepted at the Recycling Facility, and the hauler is known, the Contractor may charge the hauler a reasonable fee for reloading the load, special handling and/or cleanup, or otherwise cleaning up the load.

The MRF's sign and flier defines "too much mixed Solid Waste" as 10 percent of the load.

3.5.0 Waste Screening

Incoming loads of waste materials including carpet padding are identified at the scalehouse and directed to the MRF.

The hauler arrives at the MRF office and proceeds to the office window where the attendant/clerk receives the scale ticket and verbally questions the hauler about the loads' contents. The attendant/clerk explains the load rejection policy if the contents are suspect. The attendant/clerk also questions the hauler about any hazardous material/waste content within the load.

In the event hazardous wastes as defined in 62-701.200(54) are detected while the hauler is at the MRF, the entire load is rejected. If hazardous waste is found, hazardous waste is managed per the hazardous waste contingency plan in Appendix B.

The hauler, after passing the initial verbal inspection at office, is directed to the on-site manager, who is a trained operator, or a trained spotter who will direct the load to the respective unloading area. A trained spotter monitors the unloading activity checking for hazardous wastes, unacceptable wastes and safety concerns.

Inspection and waste control procedures are as follows:

a) No waste will be disposed (unloaded, spread, or compacted) during non-daylight hours.
b) A trained spotter will inspect each load of incoming waste as it is received and unloaded and as it is spread.
c) At a minimum, spotting will occur from the floor of the tipping/sorting area while off of equipment.
d) All unacceptable waste will be removed from the incoming waste immediately, and no other waste will be unloaded in the immediate vicinity until all unacceptable wastes have been removed and stored in the designated waste containers.
e) Sufficient number of containers for storage will be available at the site at all times.
f) Containers, which store waste, will be kept within the leachate containment area or kept covered with a waterproof cover during inclement weather, when full, and at the end of each day.
g) Putrescible waste, if found, will be placed in the Class I dumpster, which will be emptied twice a week on Wednesdays and Saturdays, or sooner if, full.

If unacceptable materials are discovered after unloading, the hauler is notified. The trained spotter physically documents with film and/or provide written notice to the hauler and Sarasota County. If unacceptable materials are encountered involving hazardous wastes (e.g. car batteries, thermostats, paint, etc.) the hazardous waste contingency plan in Appendix B will be implemented.

If Class I waste materials, as defined in 62-701.200 Definitions (13) "Class I waste", are greater than 10% of the materials within the load, the load will be inspected by a County supervisor and

redirected to the on-site Class I Landfill working face.

Waste tires, white goods and yard waste are not accepted at the MRF and will be directed to the proper area for storage. Separate areas are located at the CCSWDC for these wastes.

C&D Debris and Class III waste that cannot be recycled is disposed of at the Gulf Coast Class III Landfill and Recycling Facility in Lee County. Class I waste is disposed of at the CCSWDC in the on-site Class I Landfill. Appendix I includes information on these facilities.

3.6.0 Equipment Maintenance Procedures

The contractor provides complete maintenance on-site including preventative maintenance, normal wear, unscheduled downtime and major overhaul. Appendix F includes a list of equipment and specifications. The site has a 5,000 square foot maintenance facility. All equipment is company owned, and is maintained in job-ready condition at all times. Mechanics are employed and stationed at the on-site maintenance facility. Equipment that cannot be repaired is replaced.

All equipment service (fuel and lubrication) is performed by utilizing a mobile equipment service unit. Fuel and lubricants used to service the equipment are stored on the mobile equipment service unit at the materials recovery MRF. Small quantities of maintenance supplies are stored in manufacturers containers that are properly labeled in the maintenance building.

Waste oil from maintenance of equipment is stored in a 500-gallon waste oil tank located in the maintenance building. The oil is recycled by certified oil recycling company. All receipts for recycled oil will be kept on-site at all times. Used oil filters are stored in proper recycling drums to be collected by the used oil recycler. All records are available on-site at all times.

Safety Kleen Inc handles waste cleaning fluids. All records are available on-site at all times. The contractor is a participant in the Safety Kleen "We Care" program. Any spilled oil or fluids are collected by catch pans and deposited in the appropriate container.

3.7.0 Closure Plan and Closure Cost Estimate

Sarasota County will notify the Department in writing prior to ceasing operations, and will specify a closing date. No waste will be received by the MRF after the closing date. Within 30 days after receiving the final solid waste shipment, the owner will remove or otherwise dispose of all solid waste. Putrescible wastes will be removed within 48 hours. Closure will be completed within 180 days after receiving the final solid waste shipment. Closure will include removal of all recovered materials from the site for recycling or for disposal. When closure is completed, Sarasota County will certify in writing to the Department that closure is complete. The Department will be allowed to make an inspection within 30 days to verify the closure, and advise Sarasota County of the closure status.

To close this MRF, all waste and recyclable materials will be removed. Financial Assurance for this MRF is included in the Financial Assurance for the Sarasota County Central County Solid Waste Disposal Complex. The closure cost estimate for the MRF is calculated below. It was assumed that the waste and recyclable materials would be at the maximum stockpile permitted capacity, and would be disposed of in the on-site Class I Landfill at the current tip fee for Class I solid waste of $63.77 per ton (See rate sheet in Appendix I).

CLOSURE COST ESTIMATE FOR THE MRF

Description	Amount	Unit Cost	Total Cost
Disposal of the permitted stockpile At the on-site Class I Landfill	11,379 tons	$63.77/ton	$725,639
Loading trucks	11,379 tons	$2/ton	$22,758
Hauling waste one miles round trip from MRF to on-site Class I Landfill @ 20 tons per truck, four trips per hour and truck costs at $60 per hour. This equals $15 per trip.	569 Truck trips	$15/trip	$8,534
Miscellaneous @ 5% +/-	1	$38,000	$38,000
Profit and overhead @ 5% +/-	1	$38,000	$38,000
TOTAL CLOSURE COST ESTIMATE			**$832,931**

Since all waste will be removed from the area upon closure, no long-term care is anticipated.

3.8.0 Record Keeping

Recordkeeping shall comply with 62-701.710(9) Recordkeeping.

Operational records are maintained to include a daily log of the quantity of solid waste received, processed, stored, and removed from the site for recycling or disposal and the county of origin of the waste, if known. These records include each type of solid waste, recovered materials, residuals, and unacceptable waste, which is processed, recycled, and disposed. Such records shall be compiled on a monthly basis and shall be available for inspection by the Department. Records are retained at the MRF for three years.

Sarasota County will submit an annual report to the Department on Form 62-701.900(7). The report will include a summary of the amounts and types of wastes disposed of or recycled. Sarasota County will state that they recycle their materials. Sarasota County will include a statement giving the county of origin of materials recycled. The report will be submitted no later than April 1 of each year and covers the preceding calendar year.

Appendix A

Containment Pad Capacity Calculations

DRAINAGE CALCULATIONS

C&D RECYCLING FACILITY
SOLID WASTE MANAGEMENT

SARASOTA COUNTY LANDFILL

SARASOTA COUNTY, FLORIDA

WEBER ENGINEERING & SURVEYING, INC.
4020 Beneva Road, Suite B ~ Sarasota, FL 34233
Telephone: (941) 921-3914 ~ Fax: (941) 924-3094
E-mail: webereng@gate.net

Lawrence R. Weber, P.E.
Florida Certificate No. 30899
Date 6/5/01

DRAINAGE NARRATIVE

The volume of the rainfall runoff from the uncovered portions of the product dump, processing, storage and loading areas was computed for the 25-year 24-hour and the 100-year 24-hour storm events.

The runoff from the rainfall is contained on the work slab and drains to inlets that connect to the leachate pump tank. The water is then used to sprinkle incoming raw material to add moisture and control dust. Runoff in excess of sprinkling need is pumped to the County leachate collection forcemain.

Temporary storage of the storm runoff was computed for the product processing, storage and loading areas, leachate pump tank and sprinkler water storage tank. The storm runoff hydrographs were then run through the reservoir routing program. For the 100-year 24-hour storm event of 10 inches of rainfall, the runoff of 25,036 cu. ft. can be contained within the temporary storage areas with no discharge (temporary power loss) at a maximum elevation 26.95. With 80 gpm discharge (0.18 cfs) the storage required is 0.38 ac ft (16,553 cu ft) at maximum elevation of 26.54.

Hydrograph Report

Hyd. No. 1

25YR-24HR

Hydrograph type	= SCS Runoff	Peak discharge	= 4.46 cfs
Storm frequency	= 25 yrs	Time interval	= 5 min
Drainage area	= .76 ac	Curve number	= 96
Basin Slope	= .36 %	Hydraulic length	= 110 ft
Tc method	= USER	Time of conc. (Tc)	= 8 min
Total precip.	= 8.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 256

Total Volume = 20,577 cuft, 0.47 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
1.75	0.01	4.42	0.06	7.08	0.10	9.75	0.19
1.83	0.01	4.50	0.06	7.17	0.10	9.83	0.19
1.92	0.02	4.58	0.06	7.25	0.10	9.92	0.20
2.00	0.02	4.67	0.06	7.33	0.11	10.00	0.20
2.08	0.02	4.75	0.06	7.42	0.11	10.08	0.21
2.17	0.02	4.83	0.07	7.50	0.11	10.17	0.22
2.25	0.02	4.92	0.07	7.58	0.11	10.25	0.23
2.33	0.02	5.00	0.07	7.67	0.11	10.33	0.24
2.42	0.03	5.08	0.07	7.75	0.11	10.42	0.25
2.50	0.03	5.17	0.07	7.83	0.11	10.50	0.26
2.58	0.03	5.25	0.07	7.92	0.11	10.58	0.27
2.67	0.03	5.33	0.07	8.00	0.12	10.67	0.29
2.75	0.03	5.42	0.08	8.08	0.12	10.75	0.30
2.83	0.03	5.50	0.08	8.17	0.12	10.83	0.32
2.92	0.04	5.58	0.08	8.25	0.12	10.92	0.33
3.00	0.04	5.67	0.08	8.33	0.12	11.00	0.35
3.08	0.04	5.75	0.08	8.42	0.13	11.08	0.37
3.17	0.04	5.83	0.08	8.50	0.13	11.17	0.38
3.25	0.04	5.92	0.08	8.58	0.14	11.25	0.42
3.33	0.04	6.00	0.08	8.67	0.14	11.33	0.45
3.42	0.04	6.08	0.09	8.75	0.15	11.42	0.50
3.50	0.05	6.17	0.09	8.83	0.15	11.50	0.54
3.58	0.05	6.25	0.09	8.92	0.16	11.58	0.65
3.67	0.05	6.33	0.09	9.00	0.16	11.67	0.93
3.75	0.05	6.42	0.09	9.08	0.17	11.75	1.42
3.83	0.05	6.50	0.09	9.17	0.17	11.83	2.20
3.92	0.05	6.58	0.09	9.25	0.17	11.92	3.45
4.00	0.05	6.67	0.10	9.33	0.18	12.00	4.46 <<
4.08	0.05	6.75	0.10	9.42	0.18	12.08	4.44
4.17	0.05	6.83	0.10	9.50	0.18	12.17	3.94
4.25	0.06	6.92	0.10	9.58	0.18	12.25	3.40
4.33	0.06	7.00	0.10	9.67	0.18	12.33	2.84

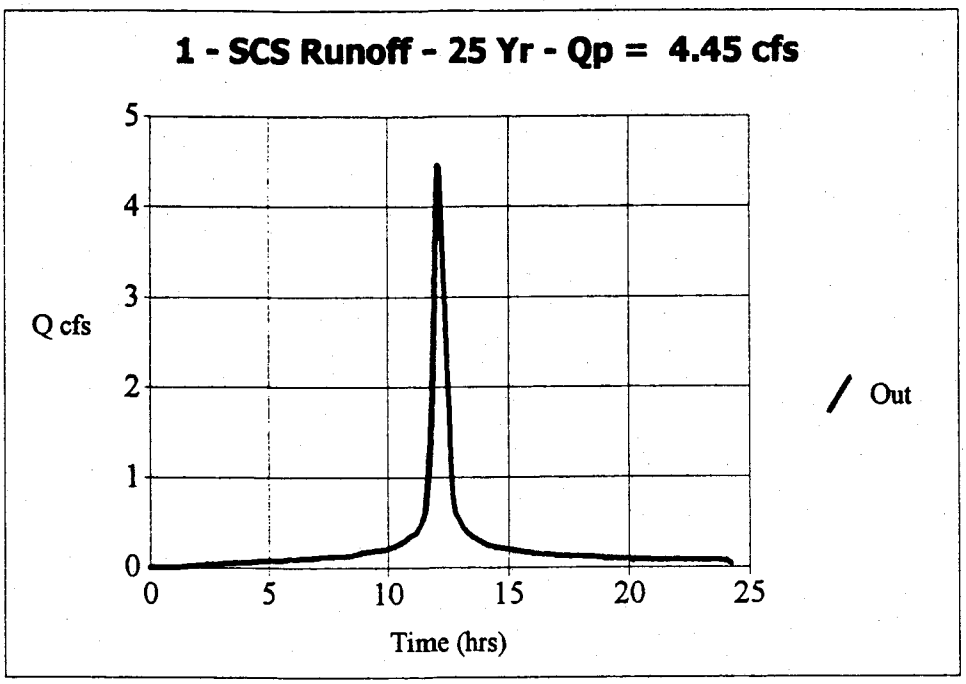
Continues on next page...

25YR-24HR

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
12.42	2.26	16.50	0.14	20.58	0.08
12.50	1.70	16.58	0.14	20.67	0.08
12.58	1.19	16.67	0.13	20.75	0.08
12.67	0.81	16.75	0.13	20.83	0.08
12.75	0.64	16.83	0.13	20.92	0.08
12.83	0.57	16.92	0.13	21.00	0.08
12.92	0.52	17.00	0.13	21.08	0.08
13.00	0.48	17.08	0.13	21.17	0.08
13.08	0.44	17.17	0.13	21.25	0.08
13.17	0.41	17.25	0.12	21.33	0.08
13.25	0.39	17.33	0.12	21.42	0.08
13.33	0.37	17.42	0.12	21.50	0.08
13.42	0.35	17.50	0.12	21.58	0.07
13.50	0.34	17.58	0.12	21.67	0.07
13.58	0.32	17.67	0.12	21.75	0.07
13.67	0.31	17.75	0.12	21.83	0.07
13.75	0.29	17.83	0.12	21.92	0.07
13.83	0.28	17.92	0.11	22.00	0.07
13.92	0.27	18.00	0.11	22.08	0.07
14.00	0.26	18.08	0.11	22.17	0.07
14.08	0.25	18.17	0.11	22.25	0.07
14.17	0.24	18.25	0.11	22.33	0.07
14.25	0.23	18.33	0.11	22.42	0.07
14.33	0.23	18.42	0.11	22.50	0.07
14.42	0.22	18.50	0.11	22.58	0.07
14.50	0.22	18.58	0.10	22.67	0.07
14.58	0.21	18.67	0.10	22.75	0.07
14.67	0.21	18.75	0.10	22.83	0.07
14.75	0.20	18.83	0.10	22.92	0.07
14.83	0.20	18.92	0.10	23.00	0.07
14.92	0.20	19.00	0.10	23.08	0.07
15.00	0.19	19.08	0.10	23.17	0.07
15.08	0.19	19.17	0.10	23.25	0.07
15.17	0.19	19.25	0.09	23.33	0.07
15.25	0.18	19.33	0.09	23.42	0.07
15.33	0.18	19.42	0.09	23.50	0.07
15.42	0.18	19.50	0.09	23.58	0.07
15.50	0.17	19.58	0.09	23.67	0.07
15.58	0.17	19.67	0.09	23.75	0.07
15.67	0.17	19.75	0.09	23.83	0.07
15.75	0.16	19.83	0.09	23.92	0.07
15.83	0.16	19.92	0.08	24.00	0.07
15.92	0.16	20.00	0.08	24.08	0.06
16.00	0.15	20.08	0.08	24.17	0.05
16.08	0.15	20.17	0.08	24.25	0.04
16.17	0.15	20.25	0.08	24.33	0.03
16.25	0.14	20.33	0.08	24.42	0.02
16.33	0.14	20.42	0.08	24.50	0.01
16.42	0.14	20.50	0.08		

...End


1 - SCS Runoff - 25 Yr - Qp = 4.45 cfs
Q cfs
0
1
2
3
4
5
0
5
10
15
20
25
Time (hrs)
Out

Hydrograph Report

Hyd. No. 2

100YR-24HR

Hydrograph type	= SCS Runoff	Peak discharge	= 5.60 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= .76 ac	Curve number	= 96
Basin Slope	= .36 %	Hydraulic length	= 110 ft
Tc method	= USER	Time of conc. (Tc)	= 8 min
Total precip.	= 10.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 256

Total Volume = 26,038 cuft, 0.60 acft

Hydrograph Discharge Table

Time (hrs)	Outflow cfs	Time (hrs)	Outflow cfs	Time (hrs)	Outflow cfs	Time (hrs)	Outflow cfs
1.42	0.01	4.08	0.08	6.75	0.13	9.42	0.23
1.50	0.02	4.17	0.08	6.83	0.13	9.50	0.23
1.58	0.02	4.25	0.08	6.92	0.13	9.58	0.23
1.67	0.02	4.33	0.08	7.00	0.13	9.67	0.23
1.75	0.02	4.42	0.08	7.08	0.13	9.75	0.24
1.83	0.03	4.50	0.08	7.17	0.13	9.83	0.24
1.92	0.03	4.58	0.08	7.25	0.14	9.92	0.25
2.00	0.03	4.67	0.09	7.33	0.14	10.00	0.26
2.08	0.03	4.75	0.09	7.42	0.14	10.08	0.27
2.17	0.04	4.83	0.09	7.50	0.14	10.17	0.28
2.25	0.04	4.92	0.09	7.58	0.14	10.25	0.29
2.33	0.04	5.00	0.09	7.67	0.14	10.33	0.30
2.42	0.04	5.08	0.09	7.75	0.15	10.42	0.32
2.50	0.04	5.17	0.10	7.83	0.15	10.50	0.33
2.58	0.05	5.25	0.10	7.92	0.15	10.58	0.35
2.67	0.05	5.33	0.10	8.00	0.15	10.67	0.36
2.75	0.05	5.42	0.10	8.08	0.15	10.75	0.38
2.83	0.05	5.50	0.10	8.17	0.15	10.83	0.40
2.92	0.05	5.58	0.10	8.25	0.16	10.92	0.42
3.00	0.06	5.67	0.11	8.33	0.16	11.00	0.45
3.08	0.06	5.75	0.11	8.42	0.17	11.08	0.46
3.17	0.06	5.83	0.11	8.50	0.17	11.17	0.49
3.25	0.06	5.92	0.11	8.58	0.18	11.25	0.53
3.33	0.06	6.00	0.11	8.67	0.18	11.33	0.57
3.42	0.06	6.08	0.11	8.75	0.19	11.42	0.63
3.50	0.07	6.17	0.12	8.83	0.20	11.50	0.68
3.58	0.07	6.25	0.12	8.92	0.20	11.58	0.82
3.67	0.07	6.33	0.12	9.00	0.21	11.67	1.17
3.75	0.07	6.42	0.12	9.08	0.21	11.75	1.79
3.83	0.07	6.50	0.12	9.17	0.22	11.83	2.76
3.92	0.07	6.58	0.12	9.25	0.22	11.92	4.34
4.00	0.07	6.67	0.13	9.33	0.23	12.00	5.60 <<

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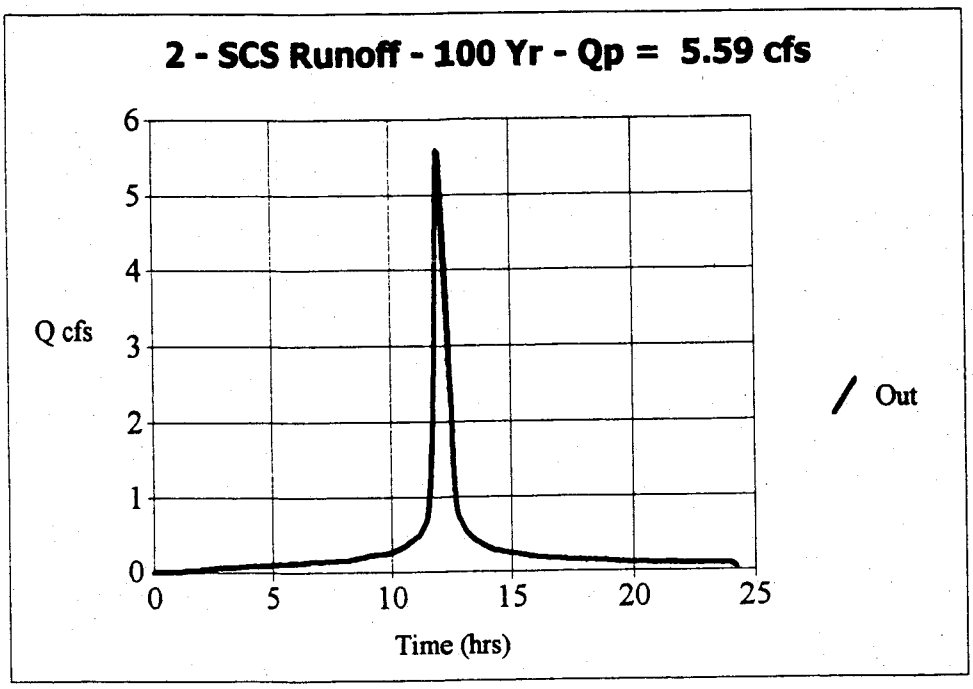
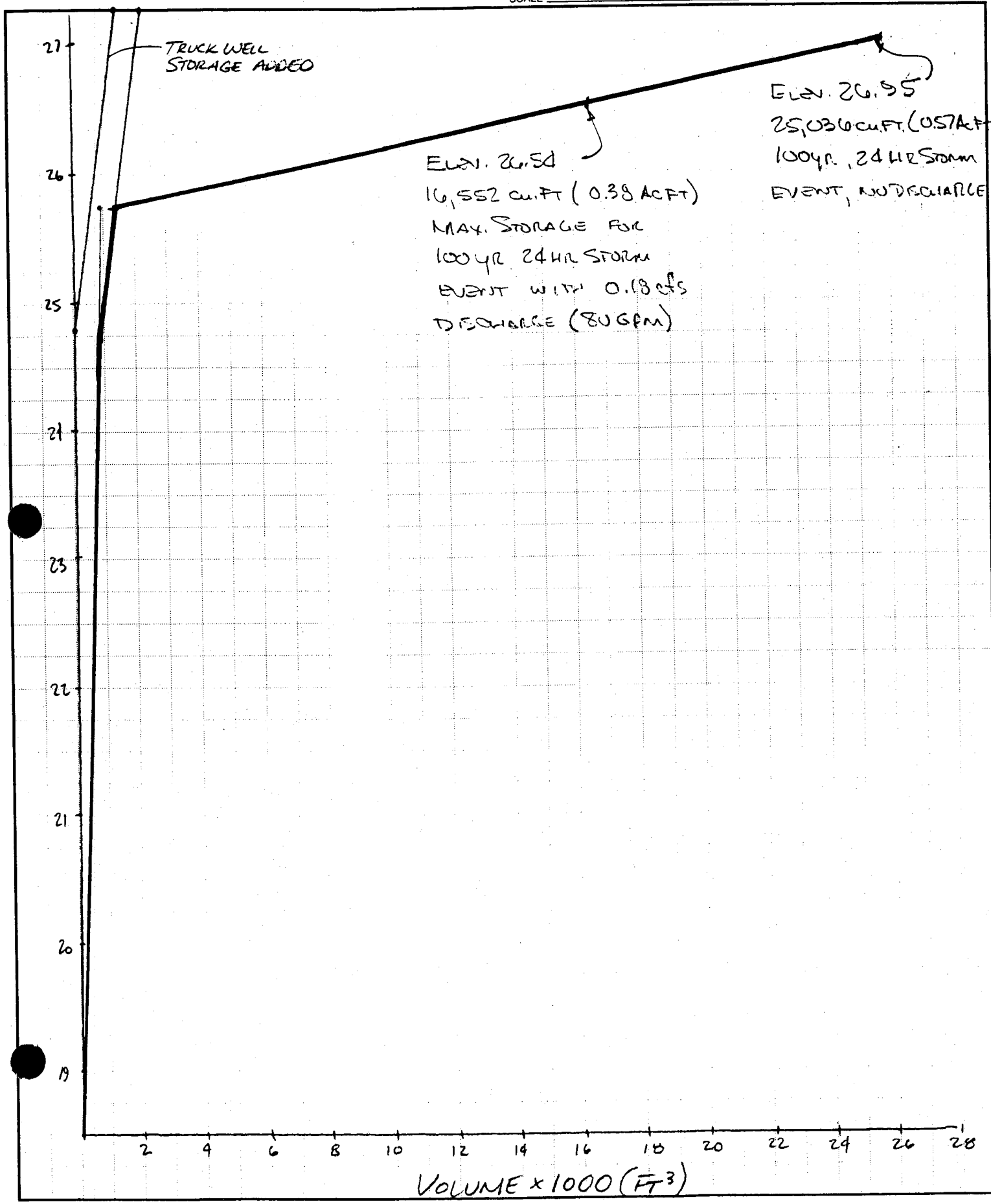
Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
12.08	5.57	16.17	0.18	20.25	0.10	24.33	0.03
12.17	4.94	16.25	0.18	20.33	0.10	24.42	0.02
12.25	4.27	16.33	0.18	20.42	0.10	24.50	0.01
12.33	3.56	16.42	0.17	20.50	0.10		
12.42	2.83	16.50	0.17	20.58	0.10		
12.50	2.12	16.58	0.17	20.67	0.10	*...End*	
12.58	1.49	16.67	0.17	20.75	0.10		
12.67	1.01	16.75	0.17	20.83	0.10		
12.75	0.80	16.83	0.16	20.92	0.10		
12.83	0.72	16.92	0.16	21.00	0.10		
12.92	0.65	17.00	0.16	21.08	0.10		
13.00	0.60	17.08	0.16	21.17	0.10		
13.08	0.55	17.17	0.16	21.25	0.09		
13.17	0.52	17.25	0.16	21.33	0.09		
13.25	0.49	17.33	0.15	21.42	0.09		
13.33	0.46	17.42	0.15	21.50	0.09		
13.42	0.44	17.50	0.15	21.58	0.09		
13.50	0.42	17.58	0.15	21.67	0.09		
13.58	0.40	17.67	0.15	21.75	0.09		
13.67	0.38	17.75	0.15	21.83	0.09		
13.75	0.37	17.83	0.15	21.92	0.09		
13.83	0.35	17.92	0.14	22.00	0.09		
13.92	0.34	18.00	0.14	22.08	0.09		
14.00	0.33	18.08	0.14	22.17	0.09		
14.08	0.31	18.17	0.14	22.25	0.09		
14.17	0.30	18.25	0.14	22.33	0.09		
14.25	0.29	18.33	0.14	22.42	0.09		
14.33	0.28	18.42	0.13	22.50	0.09		
14.42	0.28	18.50	0.13	22.58	0.09		
14.50	0.27	18.58	0.13	22.67	0.09		
14.58	0.27	18.67	0.13	22.75	0.09		
14.67	0.26	18.75	0.13	22.83	0.09		
14.75	0.26	18.83	0.13	22.92	0.09		
14.83	0.25	18.92	0.12	23.00	0.09		
14.92	0.25	19.00	0.12	23.08	0.09		
15.00	0.24	19.08	0.12	23.17	0.09		
15.08	0.24	19.17	0.12	23.25	0.09		
15.17	0.23	19.25	0.12	23.33	0.09		
15.25	0.23	19.33	0.12	23.42	0.09		
15.33	0.23	19.42	0.12	23.50	0.09		
15.42	0.22	19.50	0.11	23.58	0.09		
15.50	0.22	19.58	0.11	23.67	0.09		
15.58	0.21	19.67	0.11	23.75	0.09		
15.67	0.21	19.75	0.11	23.83	0.09		
15.75	0.20	19.83	0.11	23.92	0.08		
15.83	0.20	19.92	0.11	24.00	0.08		
15.92	0.19	20.00	0.10	24.08	0.08		
16.00	0.19	20.08	0.10	24.17	0.06		
16.08	0.19	20.17	0.10	24.25	0.04		


2 - SCS Runoff - 100 Yr - Qp = 5.59 cfs
Q cfs
0
1
2
3
4
5
6
0
5
10
15
20
25
Time (hrs)
Out

WEBER ENGINEERING & SURVEYING, INC.
4020 Beneva Rd., Suite B
Sarasota, FL 34233-1038
Ph. 941-921-3914
Fax 941-924-3094

JOB C&D RECYCLING FACILITY
SHEET NO. _____ OF _____
CALCULATED BY COJ DATE 5/25/01
CHECKED BY _____ DATE _____
SCALE _____



Reservoir Report

Reservoir No. 1

STORAGE

Culvert / Orifice Structures

		[A]	[B]	[C]
Rise (in)	=	0.0	0.0	0.0
Span (in)	=	0.0	0.0	0.0
No. Barrels	=	0	0	0
Invert El. (ft)	=	0.00	0.00	0.00
Length (ft)	=	0.0	0.0	0.0
Slope (%)	=	0.00	0.00	0.00
N-Value	=	.000	.000	.000
Orif. Coeff.	=	0.00	0.00	0.00
Multi-Stage	=	----		

Weir Structures

		[A]	[B]	[C]
Crest Len (ft)	=	0.0	0.0	0.0
Crest El. (ft)	=	0.00	0.00	0.00
Weir Coeff.	=	0.00	0.00	0.00
Eqn. Exp.	=	0.00	0.00	0.00
Multi-Stage	=			

Tailwater Elevation = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage (ft)	Storage (acft)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Discharge (cfs)
0.0	0.000	18.50	—	—	—	—	—	—	0.00
0.1	0.000	18.60	—	—	—	—	—	—	0.00
0.2	0.001	18.70	—	—	—	—	—	—	0.00
0.3	0.001	18.80	—	—	—	—	—	—	0.00
0.4	0.002	18.90	—	—	—	—	—	—	0.00
0.5	0.002	19.00	—	—	—	—	—	—	0.00
0.6	0.002	19.10	—	—	—	—	—	—	0.00
0.7	0.003	19.20	—	—	—	—	—	—	0.00
0.8	0.003	19.30	—	—	—	—	—	—	0.00
0.9	0.004	19.40	—	—	—	—	—	—	0.00
1.0	0.004	19.50	—	—	—	—	—	—	0.00
1.1	0.004	19.60	—	—	—	—	—	—	0.00
1.2	0.004	19.70	—	—	—	—	—	—	0.00
1.3	0.005	19.80	—	—	—	—	—	—	0.00
1.4	0.005	19.90	—	—	—	—	—	—	0.00
1.5	0.005	20.00	—	—	—	—	—	—	0.00
1.6	0.005	20.10	—	—	—	—	—	—	0.00
1.7	0.005	20.20	—	—	—	—	—	—	0.00
1.8	0.006	20.30	—	—	—	—	—	—	0.00
1.9	0.006	20.40	—	—	—	—	—	—	0.00
2.0	0.006	20.50	—	—	—	—	—	—	0.00
2.1	0.006	20.60	—	—	—	—	—	—	0.00
2.2	0.007	20.70	—	—	—	—	—	—	0.00
2.3	0.007	20.80	—	—	—	—	—	—	0.00

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STORAGE

Stage / Storage / Discharge Table

Stage (ft)	Storage (acft)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Discharge (cfs)
									0.00
2.4	0.007	20.90	—	—	—	—	—	—	0.00
2.5	0.007	21.00	—	—	—	—	—	—	0.00
2.6	0.008	21.10	—	—	—	—	—	—	0.00
2.7	0.008	21.20	—	—	—	—	—	—	0.00
2.8	0.008	21.30	—	—	—	—	—	—	0.00
2.9	0.009	21.40	—	—	—	—	—	—	0.00
3.0	0.009	21.50	—	—	—	—	—	—	0.00
3.1	0.009	21.60	—	—	—	—	—	—	0.00
3.2	0.010	21.70	—	—	—	—	—	—	0.00
3.3	0.010	21.80	—	—	—	—	—	—	0.00
3.4	0.010	21.90	—	—	—	—	—	—	0.00
3.5	0.010	22.00	—	—	—	—	—	—	0.00
3.6	0.011	22.10	—	—	—	—	—	—	0.00
3.7	0.011	22.20	—	—	—	—	—	—	0.00
3.8	0.011	22.30	—	—	—	—	—	—	0.00
3.9	0.012	22.40	—	—	—	—	—	—	0.00
4.0	0.012	22.50	—	—	—	—	—	—	0.00
4.1	0.012	22.60	—	—	—	—	—	—	0.00
4.2	0.012	22.70	—	—	—	—	—	—	0.00
4.3	0.013	22.80	—	—	—	—	—	—	0.00
4.4	0.013	22.90	—	—	—	—	—	—	0.00
4.5	0.013	23.00	—	—	—	—	—	—	0.00
4.6	0.013	23.10	—	—	—	—	—	—	0.00
4.7	0.013	23.20	—	—	—	—	—	—	0.00
4.8	0.014	23.30	—	—	—	—	—	—	0.00
4.9	0.014	23.40	—	—	—	—	—	—	0.00
5.0	0.014	23.50	—	—	—	—	—	—	0.00
5.2	0.015	23.65	—	—	—	—	—	—	0.00
5.3	0.016	23.80	—	—	—	—	—	—	0.00
5.5	0.017	23.95	—	—	—	—	—	—	0.00
5.6	0.018	24.10	—	—	—	—	—	—	0.00
5.8	0.018	24.25	—	—	—	—	—	—	0.00
5.9	0.019	24.40	—	—	—	—	—	—	0.00
6.1	0.020	24.55	—	—	—	—	—	—	0.00
6.2	0.021	24.70	—	—	—	—	—	—	0.00
6.4	0.022	24.85	—	—	—	—	—	—	0.00
6.5	0.023	25.00	—	—	—	—	—	—	0.02
6.6	0.024	25.08	—	—	—	—	—	—	0.04
6.7	0.025	25.16	—	—	—	—	—	—	0.05
6.7	0.025	25.24	—	—	—	—	—	—	0.07
6.8	0.026	25.32	—	—	—	—	—	—	0.09
6.9	0.027	25.40	—	—	—	—	—	—	0.11
7.0	0.028	25.48	—	—	—	—	—	—	0.13
7.1	0.029	25.56	—	—	—	—	—	—	0.14
7.1	0.029	25.64	—	—	—	—	—	—	0.16
7.2	0.030	25.72	—	—	—	—	—	—	0.18
7.3	0.031	25.80	—	—	—	—	—	—	0.18
7.3	0.042	25.82	—	—	—	—	—	—	0.18
7.3	0.052	25.84	—	—	—	—	—	—	

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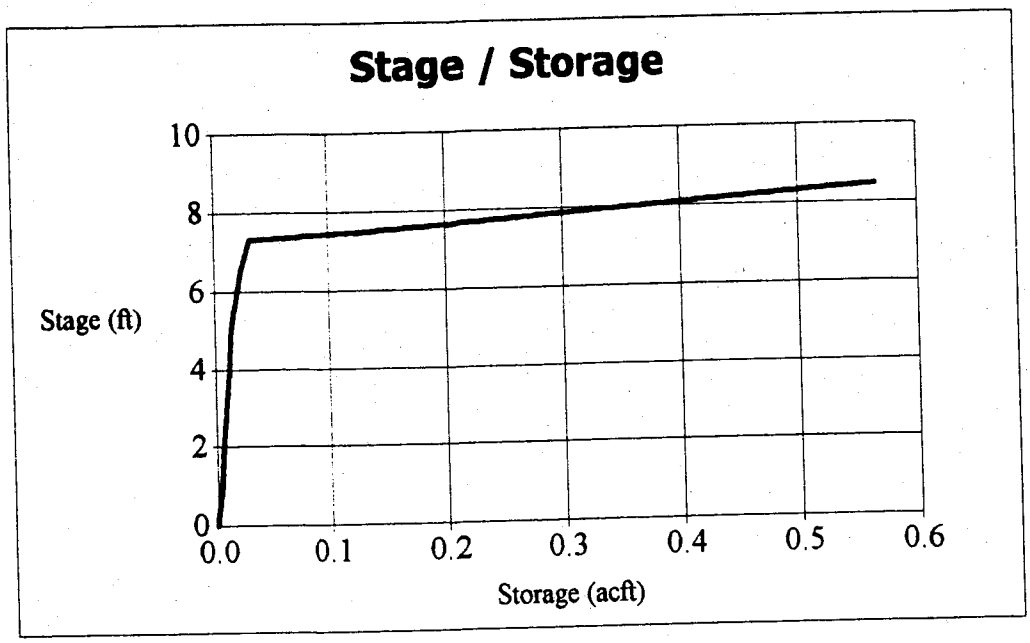
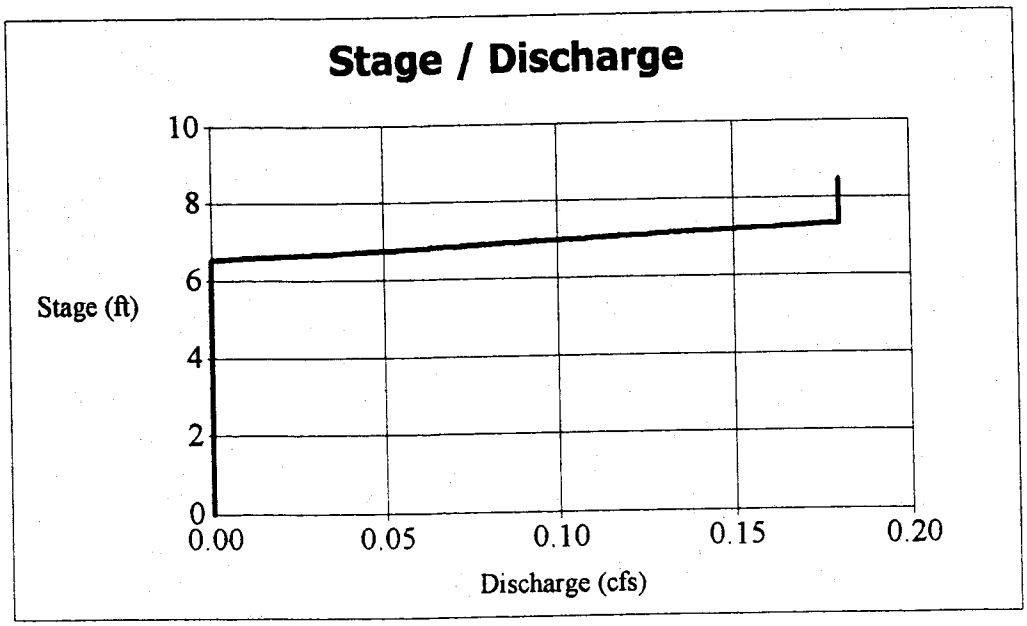
Stage / Storage / Discharge Table

Stage (ft)	Storage (acft)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Discharge (cfs)
7.4	0.063	25.86	—	—	—	—	—	—	0.18
7.4	0.074	25.88	—	—	—	—	—	—	0.18
7.4	0.084	25.90	—	—	—	—	—	—	0.18
7.4	0.095	25.92	—	—	—	—	—	—	0.18
7.4	0.106	25.94	—	—	—	—	—	—	0.18
7.5	0.117	25.96	—	—	—	—	—	—	0.18
7.5	0.127	25.98	—	—	—	—	—	—	0.18
7.5	0.138	26.00	—	—	—	—	—	—	0.18
7.6	0.161	26.05	—	—	—	—	—	—	0.18
7.6	0.184	26.10	—	—	—	—	—	—	0.18
7.7	0.207	26.15	—	—	—	—	—	—	0.18
7.7	0.230	26.20	—	—	—	—	—	—	0.18
7.8	0.252	26.25	—	—	—	—	—	—	0.18
7.8	0.275	26.30	—	—	—	—	—	—	0.18
7.9	0.298	26.35	—	—	—	—	—	—	0.18
7.9	0.321	26.40	—	—	—	—	—	—	0.18
8.0	0.344	26.45	—	—	—	—	—	—	0.18
8.0	0.367	26.50	—	—	—	—	—	—	0.18
8.1	0.389	26.55	—	—	—	—	—	—	0.18
8.1	0.411	26.60	—	—	—	—	—	—	0.18
8.2	0.433	26.65	—	—	—	—	—	—	0.18
8.2	0.455	26.70	—	—	—	—	—	—	0.18
8.3	0.477	26.75	—	—	—	—	—	—	0.18
8.3	0.499	26.80	—	—	—	—	—	—	0.18
8.4	0.521	26.85	—	—	—	—	—	—	0.18
8.4	0.543	26.90	—	—	—	—	—	—	0.18
8.5	0.565	26.95	—	—	—	—	—	—	0.18
8.5	0.587	27.00	—	—	—	—	—	—	0.18


Stage / Storage
Stage (ft)
10
8
6
4
2
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Storage (acft)


Stage / Discharge
Stage (ft)
10
8
6
4
2
0
0.00
0.05
0.10
0.15
0.20
Discharge (cfs)

Hydrograph Report

Hyd. No. 3

100YR-24HR ROUTE

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Inflow hyd. No. = 2
Max. Elevation = 26.54 ft

Peak discharge = 0.18 cfs
Time interval = 5 min
Reservoir name = STORAGE
Max. Storage = 0.38 acft

Storage Indication method used.

Total Volume = 25,036 cuft, 0.57 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
5.83	0.11	25.10	—	—	—	—	—	—	0.02
5.92	0.11	25.16	—	—	—	—	—	—	0.04
6.00	0.11	25.21	—	—	—	—	—	—	0.05
6.08	0.11	25.25	—	—	—	—	—	—	0.06
6.17	0.12	25.29	—	—	—	—	—	—	0.06
6.25	0.12	25.32	—	—	—	—	—	—	0.07
6.33	0.12	25.35	—	—	—	—	—	—	0.08
6.42	0.12	25.38	—	—	—	—	—	—	0.08
6.50	0.12	25.40	—	—	—	—	—	—	0.09
6.58	0.12	25.42	—	—	—	—	—	—	0.09
6.67	0.13	25.44	—	—	—	—	—	—	0.10
6.75	0.13	25.46	—	—	—	—	—	—	0.10
6.83	0.13	25.47	—	—	—	—	—	—	0.11
6.92	0.13	25.49	—	—	—	—	—	—	0.11
7.00	0.13	25.50	—	—	—	—	—	—	0.11
7.08	0.13	25.51	—	—	—	—	—	—	0.12
7.17	0.13	25.53	—	—	—	—	—	—	0.12
7.25	0.14	25.54	—	—	—	—	—	—	0.12
7.33	0.14	25.55	—	—	—	—	—	—	0.12
7.42	0.14	25.56	—	—	—	—	—	—	0.13
7.50	0.14	25.57	—	—	—	—	—	—	0.13
7.58	0.14	25.58	—	—	—	—	—	—	0.13
7.67	0.14	25.58	—	—	—	—	—	—	0.13
7.75	0.15	25.59	—	—	—	—	—	—	0.13
7.83	0.15	25.60	—	—	—	—	—	—	0.14
7.92	0.15	25.61	—	—	—	—	—	—	0.14
8.00	0.15	25.62	—	—	—	—	—	—	0.14
8.08	0.15	25.62	—	—	—	—	—	—	0.14
8.17	0.15	25.63	—	—	—	—	—	—	0.14
8.25	0.16	25.64	—	—	—	—	—	—	0.14
8.33	0.16	25.65	—	—	—	—	—	—	0.15
8.42	0.17	25.66	—	—	—	—	—	—	0.15
8.50	0.17	25.67	—	—	—	—	—	—	0.15
8.58	0.18	25.69	—	—	—	—	—	—	0.15
8.67	0.18	25.70	—	—	—	—	—	—	0.16
8.75	0.19	25.72	—	—	—	—	—	—	0.16

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Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
8.83	0.20	25.74	—	—	—	—	—	—	0.17
8.92	0.20	25.76	—	—	—	—	—	—	0.17
9.00	0.21	25.78	—	—	—	—	—	—	0.18
9.08	0.21	25.80	—	—	—	—	—	—	0.18 <<
9.17	0.22	25.80	—	—	—	—	—	—	0.18 <<
9.25	0.22	25.80	—	—	—	—	—	—	0.18 <<
9.33	0.23	25.80	—	—	—	—	—	—	0.18 <<
9.42	0.23	25.80	—	—	—	—	—	—	0.18 <<
9.50	0.23	25.80	—	—	—	—	—	—	0.18 <<
9.58	0.23	25.80	—	—	—	—	—	—	0.18 <<
9.67	0.23	25.80	—	—	—	—	—	—	0.18 <<
9.75	0.24	25.80	—	—	—	—	—	—	0.18 <<
9.83	0.24	25.80	—	—	—	—	—	—	0.18 <<
9.92	0.25	25.80	—	—	—	—	—	—	0.18 <<
10.00	0.26	25.80	—	—	—	—	—	—	0.18 <<
10.08	0.27	25.80	—	—	—	—	—	—	0.18 <<
10.17	0.28	25.80	—	—	—	—	—	—	0.18 <<
10.25	0.29	25.80	—	—	—	—	—	—	0.18 <<
10.33	0.30	25.80	—	—	—	—	—	—	0.18 <<
10.42	0.32	25.80	—	—	—	—	—	—	0.18 <<
10.50	0.33	25.80	—	—	—	—	—	—	0.18 <<
10.58	0.35	25.80	—	—	—	—	—	—	0.18 <<
10.67	0.36	25.80	—	—	—	—	—	—	0.18 <<
10.75	0.38	25.80	—	—	—	—	—	—	0.18 <<
10.83	0.40	25.80	—	—	—	—	—	—	0.18 <<
10.92	0.42	25.80	—	—	—	—	—	—	0.18 <<
11.00	0.45	25.80	—	—	—	—	—	—	0.18 <<
11.08	0.46	25.80	—	—	—	—	—	—	0.18 <<
11.17	0.49	25.80	—	—	—	—	—	—	0.18 <<
11.25	0.53	25.80	—	—	—	—	—	—	0.18 <<
11.33	0.57	25.80	—	—	—	—	—	—	0.18 <<
11.42	0.63	25.80	—	—	—	—	—	—	0.18 <<
11.50	0.68	25.80	—	—	—	—	—	—	0.18 <<
11.58	0.82	25.80	—	—	—	—	—	—	0.18 <<
11.67	1.17	25.80	—	—	—	—	—	—	0.18 <<
11.75	1.79	25.80	—	—	—	—	—	—	0.18 <<
11.83	2.76	25.80	—	—	—	—	—	—	0.18 <<
11.92	4.34	25.80	—	—	—	—	—	—	0.18 <<
12.00	5.60 <<	25.80	—	—	—	—	—	—	0.18 <<
12.08	5.57	25.80	—	—	—	—	—	—	0.18 <<
12.17	4.94	25.80	—	—	—	—	—	—	0.18 <<
12.25	4.27	25.80	—	—	—	—	—	—	0.18 <<
12.33	3.56	25.80	—	—	—	—	—	—	0.18 <<
12.42	2.83	25.80	—	—	—	—	—	—	0.18 <<
12.50	2.12	25.80	—	—	—	—	—	—	0.18 <<
12.58	1.49	25.80	—	—	—	—	—	—	0.18 <<
12.67	1.01	25.80	—	—	—	—	—	—	0.18 <<
12.75	0.80	25.80	—	—	—	—	—	—	0.18 <<
12.83	0.72	25.80	—	—	—	—	—	—	0.18 <<

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
12.92	0.65	25.80	—	—	—	—	—	—	0.18 <<
13.00	0.60	25.80	—	—	—	—	—	—	0.18 <<
13.08	0.55	25.80	—	—	—	—	—	—	0.18 <<
13.17	0.52	25.80	—	—	—	—	—	—	0.18 <<
13.25	0.49	25.80	—	—	—	—	—	—	0.18 <<
13.33	0.46	25.80	—	—	—	—	—	—	0.18 <<
13.42	0.44	25.80	—	—	—	—	—	—	0.18 <<
13.50	0.42	25.80	—	—	—	—	—	—	0.18 <<
13.58	0.40	25.80	—	—	—	—	—	—	0.18 <<
13.67	0.38	25.80	—	—	—	—	—	—	0.18 <<
13.75	0.37	25.80	—	—	—	—	—	—	0.18 <<
13.83	0.35	25.80	—	—	—	—	—	—	0.18 <<
13.92	0.34	25.80	—	—	—	—	—	—	0.18 <<
14.00	0.33	25.80	—	—	—	—	—	—	0.18 <<
14.08	0.31	25.80	—	—	—	—	—	—	0.18 <<
14.17	0.30	25.80	—	—	—	—	—	—	0.18 <<
14.25	0.29	25.80	—	—	—	—	—	—	0.18 <<
14.33	0.28	25.80	—	—	—	—	—	—	0.18 <<
14.42	0.28	25.80	—	—	—	—	—	—	0.18 <<
14.50	0.27	25.80	—	—	—	—	—	—	0.18 <<
14.58	0.27	25.80	—	—	—	—	—	—	0.18 <<
14.67	0.26	25.80	—	—	—	—	—	—	0.18 <<
14.75	0.26	25.80	—	—	—	—	—	—	0.18 <<
14.83	0.25	25.80	—	—	—	—	—	—	0.18 <<
14.92	0.25	25.80	—	—	—	—	—	—	0.18 <<
15.00	0.24	25.80	—	—	—	—	—	—	0.18 <<
15.08	0.24	25.80	—	—	—	—	—	—	0.18 <<
15.17	0.23	25.80	—	—	—	—	—	—	0.18 <<
15.25	0.23	25.80	—	—	—	—	—	—	0.18 <<
15.33	0.23	25.80	—	—	—	—	—	—	0.18 <<
15.42	0.22	25.80	—	—	—	—	—	—	0.18 <<
15.50	0.22	25.80	—	—	—	—	—	—	0.18 <<
15.58	0.21	25.80	—	—	—	—	—	—	0.18 <<
15.67	0.21	25.80	—	—	—	—	—	—	0.18 <<
15.75	0.20	25.80	—	—	—	—	—	—	0.18 <<
15.83	0.20	25.80	—	—	—	—	—	—	0.18 <<
15.92	0.19	25.80	—	—	—	—	—	—	0.18 <<
16.00	0.19	25.80	—	—	—	—	—	—	0.18 <<
16.08	0.19	25.80	—	—	—	—	—	—	0.18 <<
16.17	0.18	25.80	—	—	—	—	—	—	0.18 <<
16.25	0.18	25.80	—	—	—	—	—	—	0.18 <<
16.33	0.18	25.80	—	—	—	—	—	—	0.18 <<
16.42	0.17	25.80	—	—	—	—	—	—	0.18 <<
16.50	0.17	25.80	—	—	—	—	—	—	0.18 <<
16.58	0.17	25.80	—	—	—	—	—	—	0.18 <<
16.67	0.17	25.80	—	—	—	—	—	—	0.18 <<
16.75	0.17	25.80	—	—	—	—	—	—	0.18 <<
16.83	0.16	25.80	—	—	—	—	—	—	0.18 <<
16.92	0.16	25.80	—	—	—	—	—	—	0.18 <<

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Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
17.00	0.16	25.80	—	—	—	—	—	—	0.18 <<
17.08	0.16	25.80	—	—	—	—	—	—	0.18 <<
17.17	0.16	25.80	—	—	—	—	—	—	0.18 <<
17.25	0.16	25.80	—	—	—	—	—	—	0.18 <<
17.33	0.15	25.80	—	—	—	—	—	—	0.18 <<
17.42	0.15	25.80	—	—	—	—	—	—	0.18 <<
17.50	0.15	25.80	—	—	—	—	—	—	0.18 <<
17.58	0.15	25.80	—	—	—	—	—	—	0.18 <<
17.67	0.15	25.80	—	—	—	—	—	—	0.18 <<
17.75	0.15	25.80	—	—	—	—	—	—	0.18 <<
17.83	0.15	25.80	—	—	—	—	—	—	0.18 <<
17.92	0.14	25.80	—	—	—	—	—	—	0.18 <<
18.00	0.14	25.80	—	—	—	—	—	—	0.18 <<
18.08	0.14	25.80	—	—	—	—	—	—	0.18 <<
18.17	0.14	25.80	—	—	—	—	—	—	0.18 <<
18.25	0.14	25.80	—	—	—	—	—	—	0.18 <<
18.33	0.14	25.80	—	—	—	—	—	—	0.18 <<
18.42	0.13	25.80	—	—	—	—	—	—	0.18 <<
18.50	0.13	25.80	—	—	—	—	—	—	0.18 <<
18.58	0.13	25.80	—	—	—	—	—	—	0.18 <<
18.67	0.13	25.80	—	—	—	—	—	—	0.18 <<
18.75	0.13	25.80	—	—	—	—	—	—	0.18 <<
18.83	0.13	25.80	—	—	—	—	—	—	0.18 <<
18.92	0.12	25.80	—	—	—	—	—	—	0.18 <<
19.00	0.12	25.80	—	—	—	—	—	—	0.18 <<
19.08	0.12	25.80	—	—	—	—	—	—	0.18 <<
19.17	0.12	25.80	—	—	—	—	—	—	0.18 <<
19.25	0.12	25.80	—	—	—	—	—	—	0.18 <<
19.33	0.12	25.80	—	—	—	—	—	—	0.18 <<
19.42	0.12	25.80	—	—	—	—	—	—	0.18 <<
19.50	0.11	25.80	—	—	—	—	—	—	0.18 <<
19.58	0.11	25.80	—	—	—	—	—	—	0.18 <<
19.67	0.11	25.80	—	—	—	—	—	—	0.18 <<
19.75	0.11	25.80	—	—	—	—	—	—	0.18 <<
19.83	0.11	25.80	—	—	—	—	—	—	0.18 <<
19.92	0.11	25.80	—	—	—	—	—	—	0.18 <<
20.00	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.08	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.17	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.25	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.33	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.42	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.50	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.58	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.67	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.75	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.83	0.10	25.80	—	—	—	—	—	—	0.18 <<
20.92	0.10	25.80	—	—	—	—	—	—	0.18 <<
21.00	0.10	25.80	—	—	—	—	—	—	0.18 <<

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Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
21.08	0.10	25.80	—	—	—	—	—	—	0.18 <<
21.17	0.10	25.80	—	—	—	—	—	—	0.18 <<
21.25	0.09	25.80	—	—	—	—	—	—	0.18 <<
21.33	0.09	25.80	—	—	—	—	—	—	0.18 <<
21.42	0.09	25.80	—	—	—	—	—	—	0.18 <<
21.50	0.09	25.80	—	—	—	—	—	—	0.18 <<
21.58	0.09	25.80	—	—	—	—	—	—	0.18 <<
21.67	0.09	25.80	—	—	—	—	—	—	0.18 <<
21.75	0.09	25.80	—	—	—	—	—	—	0.18 <<
21.83	0.09	25.80	—	—	—	—	—	—	0.18 <<
21.92	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.00	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.08	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.17	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.25	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.33	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.42	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.50	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.58	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.67	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.75	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.83	0.09	25.80	—	—	—	—	—	—	0.18 <<
22.92	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.00	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.08	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.17	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.25	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.33	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.42	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.50	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.58	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.67	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.75	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.83	0.09	25.80	—	—	—	—	—	—	0.18 <<
23.92	0.08	25.80	—	—	—	—	—	—	0.18 <<
24.00	0.08	25.80	—	—	—	—	—	—	0.18 <<
24.08	0.08	25.80	—	—	—	—	—	—	0.18 <<
24.17	0.06	25.80	—	—	—	—	—	—	0.18 <<
24.25	0.04	25.80	—	—	—	—	—	—	0.18 <<
24.33	0.03	25.80	—	—	—	—	—	—	0.18 <<
24.42	0.02	25.80	—	—	—	—	—	—	0.18 <<
24.50	0.01	25.80	—	—	—	—	—	—	0.18 <<
24.58	0.01	25.80	—	—	—	—	—	—	0.18 <<
24.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
24.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
24.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
24.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.08	0.00	25.80	—	—	—	—	—	—	0.18 <<

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Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
25.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
25.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
26.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
27.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
28.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.17	0.00	25.80	—	—	—	—	—	—	0.18 <<

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
29.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
29.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
30.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
31.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
32.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.25	0.00	25.80	—	—	—	—	—	—	0.18 <<

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Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
33.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
33.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
34.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
35.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
36.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.33	0.00	25.80	—	—	—	—	—	—	0.18 <<

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Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
37.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
37.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
38.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
39.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
40.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.42	0.00	25.80	—	—	—	—	—	—	0.18 <<

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Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
41.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
41.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
42.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
43.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.08	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.17	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.25	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.33	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.42	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.50	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.58	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.67	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.75	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.83	0.00	25.80	—	—	—	—	—	—	0.18 <<
44.92	0.00	25.80	—	—	—	—	—	—	0.18 <<
45.00	0.00	25.80	—	—	—	—	—	—	0.18 <<
45.08	0.00	25.71	—	—	—	—	—	—	0.16
45.17	0.00	25.61	—	—	—	—	—	—	0.14
45.25	0.00	25.52	—	—	—	—	—	—	0.12
45.33	0.00	25.44	—	—	—	—	—	—	0.10
45.42	0.00	25.38	—	—	—	—	—	—	0.09
45.50	0.00	25.33	—	—	—	—	—	—	0.07

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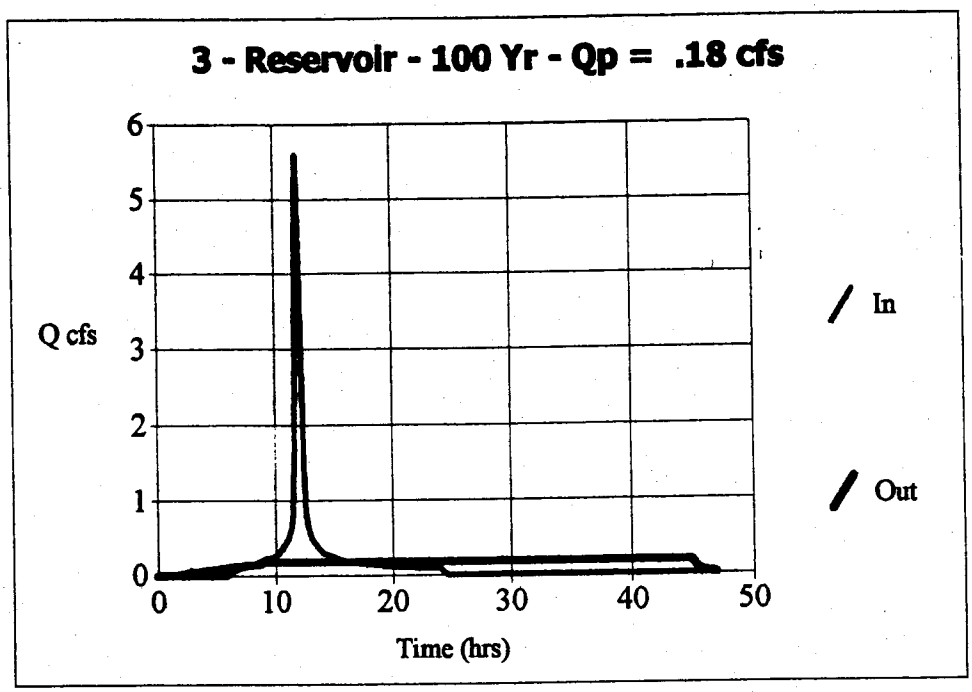
Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
45.58	0.00	25.28	—	—	—	—	—	—	0.06
45.67	0.00	25.24	—	—	—	—	—	—	0.05
45.75	0.00	25.20	—	—	—	—	—	—	0.05
45.83	0.00	25.18	—	—	—	—	—	—	0.04
45.92	0.00	25.15	—	—	—	—	—	—	0.03
46.00	0.00	25.13	—	—	—	—	—	—	0.03
46.08	0.00	25.11	—	—	—	—	—	—	0.02
46.17	0.00	25.09	—	—	—	—	—	—	0.02
46.25	0.00	25.08	—	—	—	—	—	—	0.02
46.33	0.00	25.07	—	—	—	—	—	—	0.02
46.42	0.00	25.06	—	—	—	—	—	—	0.01
46.50	0.00	25.05	—	—	—	—	—	—	0.01

...End


3 - Reservoir - 100 Yr - Qp = .18 cfs
Q cfs
0
1
2
3
4
5
6
0
10
20
30
40
50
Time (hrs)
In
Out

Appendix B

Hazardous Waste Contingency Plan

APPENDIX B

HAZARDOUS WASTE CONTINGENCY PLAN FOR SARASOTA COUNTY MRF

1. Definitions - Hazardous waste is as defined in 62-701.200 (54).
2. Load Rejection Policy - This Facility does not accept hazardous waste. If the Spotter identifies hazardous waste in a load, the Spotter will reject the load. If the load has been dumped and the Hauler is still present, the hazardous waste will be retuned to the Hauler. If the Hauler is not present and cannot be identified, the hazardous waste will be separated from the C&D Debris, and stored in the hazardous waste cabinet.
3. Processing Hazardous Waste - Hazardous waste are products which have a warning or cautionary statement on their labels: Flammable, Ignitable, Combustible, Corrosive, Reactive or Toxic. If found in a packaged factory approved container with a warning label, and the container is not leaking, then the container may be placed in the hazardous waste cabinet. If found in a container other than a factory approved container with a warning label and the container is not leaking, the Spotter shall put the container in a spill container in the hazardous waste cabinet. The Facility Operator shall call Sarasota County Hazardous Waste Management at 941-861-1532 to identify the hazardous waste and transfer it to a suitable container for transportation and disposal.
4. Hazardous Waste Spills – If the hazardous waste container breaks and there is a spill, the Spotter shall notify the Facility Operator who in turn will notify the Sarasota County Fire Department via 911, Sarasota County Hazardous Waste Management at 941-861-1532 and the Sarasota County Manager of Solid Waste Operations at 941-861-1570. If the Facility Operator cannot be located, the Spotter shall notify the Sarasota County Fire Department via 911. The Spotter will also direct other employees to shut down all equipment and clear the area.
5. Hazardous Waste Disposal – When the hazardous waste cabinet is full, or at least monthly, the hazardous waste shall be disposed of at Sarasota County Project Greensweep, which has chemical collection centers located at Bee Ridge Landfill and the Jackson Road Transfer Station. If the hazardous waste is rejected at the Sarasota County chemical collection center, Meyer & Gabbert will contract with a licensed hazardous waste collector for transportation and disposal of the hazardous waste. Meyer & Gabbert will maintain records at the office of all hazardous waste transactions.

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Appendix C

Hurricane Contingency Plan

APPENDIX C
HURRICANE CONTINGENCY PLAN
FOR
SARASOTA COUNTY MRF

This plan is a cooperative effort with the Solid Waste Operations Division of Sarasota County.

I. Hurricane/Stormwater Phase I 12-24 hours prior to storm.

1. Ensure that sufficient supplies are on hand to support daily operations for at least one week (i.e., fuel, lubricants, paper, and sanitary goods).
2. Inspect office and equipment tie downs and anchors, adjusting as required.
3. Board up windows and doors on office and other structures.
4. Procure and check emergency generator for operation and service condition.
5. Top off all equipment with fuel and assure operational status.
6. Order any anticipated repair parts or consumable items required.
7. Back up all records on computer, remove backup tape and send to main office.
8. Secure all loose items on C&D site.
9. Inventory items at site. Take photos if time permits.
10. Check employee notifications list.

II. Hurricane Warning Phase II 0-12 hours prior to storm.

1. Remove and secure all records, valuables and personal property. All records should be securely wrapped into a waterproof package.
2. Gather all mobile equipment on the leeward side of the earth berm adjoining the C&D site. Secure or remove all loose items on or in the equipment.
3. Advise key employees of post hurricane operational plan.
4. Double check key employee notification list, i.e., address and phone numbers of where they will be staying during the storm.

III. Post Hurricane Plan

1. Check condition of site and perform a damage assessment. Clean and repair structures and equipment as required.
2. Bypass all incoming waste until the facility is repaired in the case of damaged or destroyed buildings (including roof structure over leachate containment areas) of the MRF if the facilities are damaged to the point that contractor cannot operate within permit stipulations.
3. Contact rental agents for replacement equipment or structures as needed.

4. Contact key personnel for a report on personnel on the notification list. This report should include a damage assessment of their home, transportation, and phone as well as the physical condition of their family. Encourage employees to return to work as soon as possible.

IV. Resume Operations as Conditions Dictate:

A. All equipment and building intact.
   1. Normalize operations.

B. All equipment intact, buildings damaged or absent:
   1. Bypass all incoming waste until the facility is repaired in the case of damaged or destroyed buildings (including roof structure over leachate containment areas) of the MRF until facility can be repaired to comply with permit stipulations.
   2. Bring in temporary office trailer/RV or other to serve as office and sanitary facility.

C. All stationary equipment damaged or absent - buildings damaged or absent:
   1. Rent or lease mobile equipment to perform manual recycling until replacement equipment and buildings are installed.
   2. Secure temporary employees to perform manual recycling as required.
   3. Remove any non-processed materials to landfill or other recycling facilities.
   4. Bypass all incoming waste until the facility is repaired in the case of damaged or destroyed buildings (including roof structure over leachate containment areas) of the MRF until facility is repaired and inspected and certified to reopen.

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Appendix D

Operations Contingency Plan

APPENDIX D
OPERATIONAL CONTINGENCY PLAN FOR MRF

This plan is a cooperative effort with the Solid Waste Operations Division of Sarasota County. The following procedures will be used in case of interruption of service due to explosion, fire, natural disaster, or prolonged down time of any equipment necessary to carry out the obligations of the contract between Sarasota County and Meyer & Gabbert for recycling of C&D and Class III waste materials.

Post-Incident Procedure:

1. Check condition of site and perform a damage assessment. Require bypassing of all incoming waste until the MRF is repaired in the case of damaged or destroyed buildings (including roof structures over leachate containment areas).
2. Clean and repair structures and equipment as required.
3. Contact rental/lease agent for replacement equipment or structures as needed.
4. Contact all personnel on notification list if hurricane or natural disaster.
5. Resume operations as conditions dictate:
   - A. All buildings and equipment intact; normalize operations.
   - B. All equipment intact; buildings absent or damaged:
     - B1. Operate from concrete slab or bypass MRF until building is repaired
     - B2. Bring in field office trailer from other division, if office is damaged or destroyed.
   - C. Stationary equipment damaged or broken:
     - C1. Evaluate equipment in need of repair.
     - C2. Bypass MRF if necessary until permit specifications can be compiled with.
     - C3. Order repair/replacement parts as needed.
     - C4. Mechanics and a welder/fabricator are available from our shop to make necessary repairs. Manufacturer will do warranty repairs. Extended warranties were purchased.
     - C5. Rent or lease replacement stationary equipment if damage is beyond repair. Secure temporary employees to perform manual recycling as required.
   - D. Mobile equipment damaged or broken:
     - D1. Bring in mobile equipment from our excavation division as needed.
     - D2. Rent or lease mobile equipment, if not available from our company.
6. In the event of a major explosion or disaster, minimum technology recycling would be put in place with possible diversion of loads to the landfill face.

Appendix E

Training Plan

And

Staff Chart

Appendix E – Training Plan

Meyer & Gabbert C & D Debris Materials Recovery Facility

General

The training plan shall be in compliance with 62-701.320(15). The training plan and proof of training certificates shall be kept at the site.

Operator Training

Operators of waste processing facilities shall complete 16 hours of initial training, and shall pass an examination as part of that training. Within three years after passing the examination, and every three years thereafter, operators shall complete an additional 8 hours of continued training.

Meyers & Gabbert has at least one of the principals of the company trained as an operator.

Spotter Training

At least one trained spotter shall complete 8 hours of initial training, and every three years thereafter, trained spotters shall complete an additional 4 hours of continued training. A trained spotter shall inspect each and every load for prohibited waste, and see that all prohibited waste is removed.

Meyers & Gabbert has two supervisory employees trained as spotters. Operators and Spotters train general labor employees in the art of spotting. This training provides at least six assistant spotters in proper spotting.

Training Center

Operators and Spotters are trained at the University of Florida TREEO Center. A list of training classes for the up coming year is included with this training plan.

Chris S. Kohl with Kohl Consulting Inc., which is an FDEP approved trainer, also trains Operators and Spotters.

Training certificates for each of the existing trained employees are included with this plan.

U:\OldG\WASTEMAN\SARASOTA\C&D Permit\Appendix E Training.doc

UNIVERSITY OF FLORIDA TREEO CENTER

Excellence in Environmental Education and Training

Click on the areas below for course information:

- » Asbestos Abatement
- » Backflow Prevention
- » Engineering
- » Environmental Management Systems Institute
- » GIS /GPS
- » Hazardous Materials / Waste
- » Health and Safety
- » Indoor Air Quality
- » Lead Abatement
- » Online Courses
- » Pollution Prevention
- » Solid Waste
- » Stormwater Management
- » Train-the-Trainer
- » Water Quality (W/WW)

- Continuing Education Credit Information
- Press Releases

Solid Waste

Introduction Courses-at-a-Glanc

16-Hour Initial Training Course for Transfer Station Operators

- Certification Credit Type: Initial

19-Hour Initial Training Course for Transfer Station Operators and MI Operators

- CEU: 1.9
- Solid Waste I II III/C&D : 10.0
- SWANA CEU: 2.50
- Solid Waste TS/MRF: 8.0
- Solid Waste Spotter: 4.0
- FBPE PDH (EXP00074): 19.0
- Solid Waste Initial: 19.0
- Times: Day One and Two: 7:30 am - 6:30 pm

24-Hour Initial Training Course for Landfill Operators (Class I, II, III Sites)

- Certification Credit Type: Initial
- CEU: 2.4
- FBPE PDH (EXP00074): 24.0
- Solid Waste I,II,III/C&D: 16.0
- SWANA CEU: Pending
- Times: Day One & Two: 7:30 am - 5:30 pm
- Time Day Three: 7:30 am - 1:30 pm

8-Hour Initial Training Course for Spotters at Class I, II, III Facilities, Processing Facilities and C&D Facilities

- Certification Credit Type: Initial
- CEU: 0.8
- Solid Waste Spotter Initial: 8.0
- Solid Waste I II III/C&D: 8.0
- Solid Waste Spotter: 8.0
- Solid Waste TS/MRF: 8.0
- SWANA CEU: 3.0
- FBPE PDHs (EXP 00074): 8.0
- Time: 8:00 a.m. - 5:00 p.m.

Asbestos Awareness Course for Landfill Operators

- Certification Credit Type: Refresher
- On-site training is available.
- CEU: 0.4
- FBPE PDHs (EXP 00074): 4.0
- Solid Waste I II III/C&D: 4.0
- Solid Waste Spotter : 4.0
- Solid Waste TS/MRF: 4.0
- SWANA CEU: 2.5
- Time: 8:00 am - 12:00 pm

Bird and Wildlife Management at Solid Waste Management Facilities

- Certification Credit Type: Refresher

Chemical Compatibility and Storage

- CEU: 0.8
- FBPE PDHs: 8
- FBPE Provider No.: EXP00074
- FDEP OCP Course No.: 4255
- FDEP OCP DW/WW CEUs: 0.8
- FDEP OCP Level: Intermediate
- Time: 8:00 a.m. - 5:00 p.m.

Construction and Demolition Debris Landfills: A Short Course for Ope 24 Hours

- Certification Credit Type: Initial
- CEU: 2.4
- Solid Waste Initial C&D: 24.0
- Solid Waste I II III/C&D: 16.0
- SWANA CEU: 2.4
- FBPE PDHs (EXP 00074): 24.0
- Time: Day One: 7:30 a.m. - 6:00 p.m.
- Time: Day Two: 7:30 a.m. - 5:30 p.m.
- Time: Day Three: 8:00 a.m. - 3:00 p.m.

Construction and Demolition Waste Recycling

- Certification Credit Type: Refresher
- CEU: 0.7
- SWANA CEU: 1.50
- Solid Waste I II III/C&D: 7.0
- Solid Waste MRF: 7.0
- Solid Waste Spotter: 7.0
- FBPE PDHs (EXP 00074): 7.0
- Time: 8:00am-4:00pm

DOT Hazardous Materials 126-F Online

- CEU: 0.7
- FBPE PDHs: 7.0
- FBPE Provider No.: EXP 00074

Environmental Management Systems - Overview

- Certification Credit Type: Refresher
- CEU: 0.7
- FBPE PDHs: 7.0
- FBPE Provider No.: 00074
- Solid Waste I II III/C&D: 4.0
- Solid Waste TS/MRF: 4.0
- SWANA CEUs: 5.5
- Time: 8:30 am - 5:00 pm

Environmental Management Systems Internal Audit Procedures

- CEU: 1.5
- FBPE PDHs: 15
- FBPE Provider No.: EXP 00074
- Solid Waste I II III/C&D: 4.0
- Solid Waste TS/MRF: 4.0
- SWANA CEU: 10.0
- Time: 8:00 am - 5:00 pm

Environmental Management Systems: An Introduction

- Certification Credit Type: Refresher
- CEU: 0.4
- FBPE PDHs: 4.0
- FBPE Provider No.: EXP 00074
- Times: 8:00 am - 12:00 pm
- SWANA CEUs: 4.0
- Solid Waste I, II, III, C & D: 2.0
- Solid Waste, TS, MRF: 2.0

Excavation and Trenching: Competent Person Training

- CEU: 0.8
- FBPE PDHs: 8.0
- FBPE Provider No.: 00074
- FDEP OCP Course No.: 4201
- FDEP OCP DW/WW CEUs: 8.0
- FDEP OCP Level: Intermediate
- Solid Waste I II III/C&D: 8.0
- SWANA CEU: Pending
- Time: 8:00 am - 5:00 pm

Fundamentals of Slope Stability

- CEU: 1.6
- SWANA CEU: 14.75
- Solid Waste I, II, III/C&D: 16.0
- FBPE PDHs (EXP 00074): 16.0
- Time Day 1: 1:00 pm-5:00 pm
- Time Day 2: 8:00 am-5:00 pm
- Time Day 3: 8:00 am-12:00 pm

Groundwater Issues for Landfill Operators

- Certification Credit Type: Refresher
- CEU: 0.6
- SWANA CEU: 4.0
- Solid Waste I II III/C&D: 6.0
- FBPE PDHs (EXP 00074): 6.0
- Time: 8:00 am - 4:00 pm

Hazardous Materials Chemistry for the Non-Chemist

- CEU: 0.8
- FBPE PDHs: 8
- FBPE Provider No.: EXP 00074
- FDEP OCP Course No.: 4254
- FDEP OCP DW/WW CEUs: 0.6
- FDEP OCP Level: Intermediate
- Times: 8:00 a.m. - 5:00 p.m.

Hazardous Waste Regulations for Generators

- CEU: 0.8
- FBPE: 8 PDHs
- Solid Waste I II III/C&D: 4.0
- Solid Waste Spotter: 4.0
- Solid Waste TS/MRF: 4.0
- SWANA CEUs: 3.0
- Time: 8:00 am - 5:00 pm

HazCom Standard Right to Know Online

- CEU: 0.2
- FBPE PDHs: 2.0
- FBPE Provider No.: EXP 00074

HazWoper 40-Hour Health & Safety Online

- Certification Credit Type: Refresher
- CEU: 4.0
- FBPE PDHs: 40.0
- FBPE Provider No.: EXP 00074
- FDEP OCP Course No.: 4205
- FDEP OCP DW/WW CEUs: 3.0
- FDEP OCP Level: Advanced
- Solid Waste I II III/C&D: 8.0
- Solid Waste TS/MRF: 8.0

HazWoper 8-Hour Refresher Online

- CEU: 0.8
- FBPE PDHs: 8.0
- FBPE Provider No.: EXP 00074

- FDEP OCP Course No.: 4212
- FDEP OCP DW/WW CEUs: .6
- FDEP OCP Level: Advanced

Health and Safety for Solid Waste Workers

- Certification Credit Type: Refresher

Health and Safety Training for Hazardous Materials Activities: 40-hou Course

- CEU: 4
- FBPE PDHs: 40.0
- FBPE Provider No.: EXP 00074
- FDEP OCP Course No.: 4209
- FDEP OCP DW/WW CEUs: 3.0
- FDEP OCP Level: Advanced
- Solid Waste I II III/C&D: 8.0
- Solid Waste TS/MRF: 8.0
- SWANA CEU: 27.5
- Times (Day 1-4): 8:00 am - 5:00 pm
- Times (Day 5): 8:00 am - 12:00 noon

Health and Safety Training for Hazardous Materials Activities: 8-hour Refresher

- Certification Credit Type: Refresher
- CEU: 0.8
- FBPE PDHs: 8.0
- FBPE Provider No.: EXP 00074
- FDEP OCP Course No.: 4210
- FDEP OCP DW/WW CEUs: 0.6
- FDEP OCP Level: Advanced
- Solid Waste I II III/C&D: 4.0
- Solid Waste Spotter: 2.0
- Solid Waste TS/MRF: 4.0
- SWANA CEU: 4.5
- Time: 8:00 am - 5:00 pm

Health and Safety Training for Landfill Operations OnLine

- Certification Credit Type: Refresher
- CEU: 0.5
- Solid Waste I II III/C&D: 5.0
- Solid Waste TS/MRF: 5.0
- Solid Waste Spotter: 2.0
- FBPE PDHs (EXP 00074): 5.0

Introduction to Electrical Maintenance

- Certification Credit Type: Refresher
- FDEP OCP DW/WW CEU: 2.0
- FDEP OCP Course No.: 4552
- FDEP OCP Level: Intermediate
- CEU: 2.0
- Solid Waste I II III/C&D: 16.0
- Solid Waste TS/MRF: 16.0
- FBPE PDH (EXP00074): 20
- Time:: 8:30 a.m. - 5 p.m.

Landfill Gas and Leachate Systems

- Certification Credit Type: Refresher
- CEU: 0.8
- SWANA CEU: 5.5
- Solid Waste I II III/C&D: 8.0
- FBPE PDHs (EXP 00074): 8.0
- Time: 8:00 am - 5:00 pm

Management of Leachate, Gas, Stormwater and Odor at Class I, II, a

Landfills

- Certification Credit Type: Refresher
- CEU: 0.8
- SWANA CEU: 5.0
- Solid Waste I II III/C&D: 8.0
- FBPE PDHs (EXP 00074): 8.0
- Time: 8:00 am - 5:00 pm

Management of Special Waste for SWM Facilities Operators

- Certification Credit Type: Refresher
- FBPE PDHs: 4.0
- Solid Waste I II III/C&D: 4.0
- Solid Waste TS/MRF: 4.0
- Solid Waste Spotter: 4.0
- SWANA CEUs: Pending
- Time: 8:00 am - noon

Measurements and Calculations for Landfill Operators

- Certification Credit Type: Refresher
- CEU: 0.5
- SWANA CEU: 2.5
- Solid Waste I II III/C&D: 5.0
- FBPE PDHs (EXP 00074) : 5.0
- Time: 8:00 a.m. - 1:00 p.m.

Permit Required Confined Space Training

- CEU: 0.8
- FBPE PDHs: 8.0
- FBPE Provider No.: 00074
- FDEP OCP Course No.: 4215
- FDEP OCP DW/WW CEUs: 0.8
- FDEP OCP Level: Intermediate
- Solid Waste I II III/C&D: 8.0
- Solid Waste TS/MRF: 8.0
- Time: 8:00 am - 5:00 pm

Pumps and Pumping

- CEU: 2.2
- FBPE PDHs: 22.0
- FBPE Provider No.: EXP 00074
- FDEP OCP Course No.: 4551
- FDEP OCP DW/WW CEUs: 2.20
- FDEP OCP Level: Intermediate
- Solid Waste I II III/C&D: 16
- Solid Waste TS/MRF: 16
- Time: Day One: 8:15 a.m. - 5:00 p.m.
- Time: Day Two and Three: 8:30 a.m. - 5:00 p.m.

Spotter Training for Solid Waste Facilities

- Certification Credit Type: Initial
- CEUs: 0.8
- Solid Waste Spotter Initial : 8.0
- Solid Waste I II III/C&D: 8.0
- Solid Waste TS/MRF: 8.0
- FBPE PDHs (EXP 00074) : 8.0
- Time: 8:00 am - 5:00 pm

SWANA-Manager of Landfill Operations (MOLO)

- Certification Credit Type: Initial
- Solid Waste I II III/C&D: 16
- CEU: 3.0
- Solid Waste TS/MRF: 8.0
- SWANA CEU: 30.0
- Time: Day 1: 7:30 am - 6:15 pm
- Time: Day 2: 8:00 am - 5:15 pm

- Time: Day 3: 7:30 am - 5:00 pm
- Time: Day 4: 8:00 am - 11:30 am

SWANA-Manager of Landfill Operations (MOLO) - Exam Only

- Certification Credit Type: Initial
- CEU: 0.0
- Time: 8:00 am - 11:30 pm
- Time April Class: 1:00 pm - 4:00 pm

SWANA-Managing MSW Recycling Systems - Exam Only

- CEU: 0.0
- Time : 8:00 am - 11:30 am
- Time April Class: 1:00 pm - 4:00 pm

The Old Landfills Seminar

- Certification Credit Type: Refresher
- CEU: 0.5
- SWANA CEU: 3.5
- Solid Waste I II III/C&D: 5.0
- FBPE PDHs (EXP 00074): 5.0
- Time: 10:00 am - 4:00 pm

Train-the-Trainer For Environmental Occupations

- CEU: 2.8
- FBPE PDHs: 28.0
- FBPE Provider No.: EXP 00074
- FDEP OCP Course No.: 4357
- FDEP OCP DW/WW CEUs: 0.8
- FDEP OCP Level: Intermediate and Advanced
- Solid Waste I II III: 7.0
- Time - Days 1-3: 8:30 am - 5:00 pm
- Time Day 4: 8:00 am - noon

Train-the-Trainer Refresher

- Certification Credit Type: Refresher
- CEU: 1.2
- FBPE PDHs: 12
- FBPE Provider No.: EXP00074
- Time Day One: 8:00 a.m. - 5:00 p.m.
- Time Day Two: 8:00 a.m. - 12:00 noon

Training for Spotters at Construction and Demolition Sites, Landfills a Transfer Stations

- Certification Credit Type: Initial
- CEU: 0.8
- Solid Waste Spotter Initial: 8.0
- Solid Waste I II III/C&D: 8.0
- Solid Waste TS/MRF: 8.0
- FBPE PDHs (EXP 00074): 8.0
- Time: 8:00 am - 5:00 pm

Two-hour Spotter Refresher Training OnLine

- Certification Credit Type: Refresher
- CEU: 0.2
- SWANA CEU: 1.0
- Solid Waste I II III/C&D: 2.0
- Solid Waste TS/MRF: 2.0

U.S. DOT Hazardous Materials/Waste Transportation

- CEU: 0.75
- FBPE: 7.5 PDHs
- Solid Waste I,II,III/C & D: 6.0
- Solid Waste TS/MRF: 6.0
- SWANA CEU: 5.0

- Time: 8:00 am - 4:30 pm

Waste Screening and Identification for Landfill Operators and Spotter

- Certification Credit Type: Initial
- CEU: 0.8
- Solid Waste Spotter Initial: 8.0
- Solid Waste I II III/C&D: 8.0
- Solid Waste TS/MRF: 8.0
- Time: 8:00 am - 5:00 pm

Wildlife and Wetland Training for Solid Waste Facilities

- Certification Credit Type: Refresher
- CEUs: 0.8
- FBPE PDH (EXP00074): 4.0 hours
- SWANA: 5.0
- Solid Waste I,II,III/C&D: 8.0
- Time: 8:00 a.m. - 5:00 p.m.

TREEO Center • Division of Continuing Education • University of Florida

3900 SW 63rd Blvd.
Gainesville, FL 32608

tel: (352) 392-9570
fax: (352) 392-6910

train@treeo.ufl.edu

APPROVED TRAINING COURSES FOR CONSTRUCTION & DEMOLITION DEBRIS OPERATORS & SPOTTERS
(Updated March 26, 1998)

APPROVED INITIAL TRAINING COURSES FOR C&D OPERATORS •

Course Title	Provider	Hours
Solid Waste Landfill: Operators Short School	TREEO	20
C&D Disposal: Operators Short School	TREEO	20
SWANA International Course	SWANA	20
Landfill University (Waste Management Of North America)	Waste Management	20

APPROVED CONTINUING EDUCATION TRAINING COURSES FOR C&D OPERATORS • *AND SPOTTERS* Δ

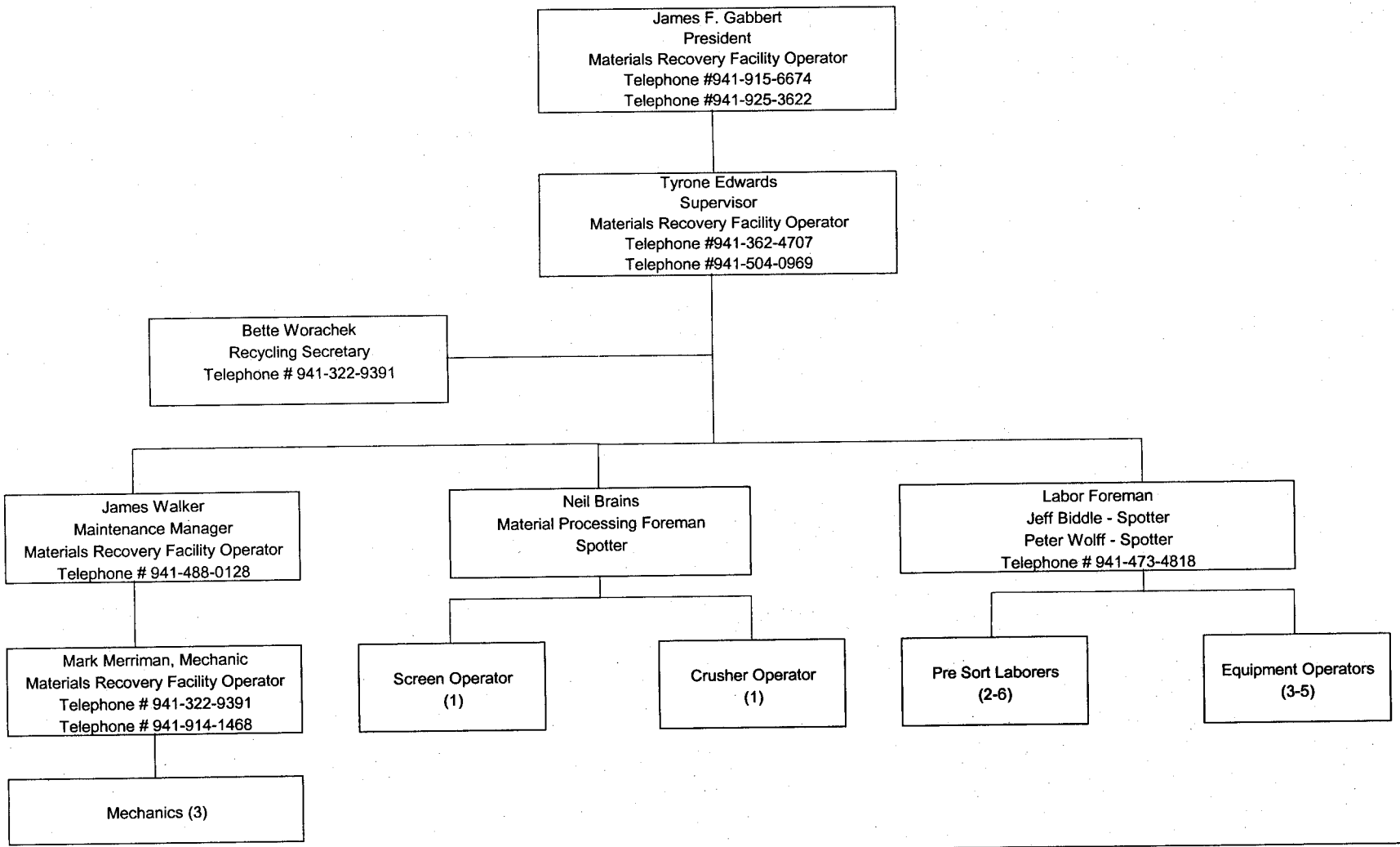
Course Title	Provider	Hours
1. Waste Screening at MSW Mgmt Facilities Δ•	SWANA-FL	10
2. Introduction to Groundwater Contamination, Investigation, & Remediation Assessment •	TREEO	13
3. Groundwater Monitoring, Analysis and Data Interpretation •	TREEO	12
4. Waste Screening and Identification For Landfill Operators and Spotters Δ•	TREEO	8
5. Stormwater Management For Landfills •	TREEO	8
6. Inspection Procedures for Agrichemical Containers Offered for Recycling [Pesticide] •	IFAS	1
7. Eight Hour Spotter Training for C&D Sites Δ•	TREEO	8
8. What Can I Accept & How Can I Keep It From Blowing Around •	TREEO	2
9. Asbestos Awareness Course for Landfill Operators Δ•	TREEO	4
10. Landfill Compliance Inspections Δ•	TREEO	2
11. Groundwater Monitoring Requirements and Techniques for Landfills •	TREEO	2
12. Wet Weather Operations Δ•	TREEO	4
13. Operational Issues for Landfill Managers •	SWANA-Int'l	17
14. Landfill Gas Management •	SWANA-Int'l	4
15. Solid Waste Landfills Correspondence Course Δ•	Univ. Of Wisconsin	10
16. Basic Landfill Operations •	Kohl Training	8
17. Excavation, Trenching and Soil Mechanics •	TREEO	8
18. Hazard Communications Course Δ•	Escambia County	4
19. Hazardous Materials in Construction and Demolition Waste Δ•	TREEO	4
20. Construction and Demolition Waste Recycling Δ•	TREEO	7
21. Permit Required Confined Space Training •	TREEO	7
22. Developing a Usable Operations Plan •	Kohl Training	4
23. Measures and Calculations for Landfill Operators •	Kohl Training	5
24. Fires at Landfills Δ•	Kohl Training	2

For further information on how to register for these and other approved courses please call Dawn Jenkins at the TREEO Center, (352) 392-9570 ext. 127 or SunCom 622-9570, Fax: (352) 392-6910, E-mail: djenkin@treeo.doce.ufl.edu

file:C&DTRNF1.DOC

Sarasota County Central County Solid Waste Disposal Complex
Meyer & Gabbert Excavating Contractors Inc.
C&D Debris Material Recycling Facility

STAFF CHART



UNIVERSITY OF FLORIDA

TREEO CENTER

Center for Training, Research and Education for Environmental Occupations

certifies that

James F. Gabbert

attended

Construction and Demolition Debris Landfills:
A Short Course for Operators – 24 Hours

August 20-22, 2001
and is awarded this

Certificate of Attendance

Date issued: **08/22/01**
CEU's : **24**

Passed Exam with 70% or higher Proficiency

William T. Engel, Jr., Ph.D.
Director

Kohl Consulting Inc.

Is Proud to Certify That

Jim Gabbert

Has Successfully Completed the
16 Hour Initial Training Course for
Materials Recovery Facility Operators Entitled :

16-Hour Initial Training Course Materials
Recovery Facility Operators (#198)
November 16th and 17th, 2001

And Has Successfully Completed the Required Examination
in Accordance with the Training Requirements
for Waste Processing Facility Operators in Florida

Signed this 4th Day of November, 2001

Chris S. Kohl

President

Kohl Consulting Inc.

Is Proud to Certify That

Tyrone Edwards

Has Successfully Completed the
16 Hour Initial Training Course for
Materials Recovery Facility Operators Entitled :

16-Hour Initial Training Course Materials
Recovery Facility Operators (#198)
November 16th and 17th, 2001

And Has Successfully Completed the Required Examination
in Accordance with the Training Requirements
for Waste Processing Facility Operators in Florida

Signed this 4th Day of November, 2001

Chris S. Kohl

President

Kohl Consulting Inc.

Is Proud to Certify That

James Walker

Has Successfully Completed the
16 Hour Initial Training Course for
Materials Recovery Facility Operators Entitled :

16-Hour Initial Training Course Materials
Recovery Facility Operators (#198)
November 27th and 28th, 2001

And Has Successfully Completed the Required Examination
in Accordance with the Training Requirements
for Waste Processing Facility Operators in Florida

Signed this 4th Day of November, 2001

Chris S. Kohl

President

Kohl Consulting Inc.

Is Proud to Certify That

Mark M. Merriman

Has Successfully Completed the
16 Hour Initial Training Course for
Materials Recovery Facility Operators Entitled :

16-Hour Initial Training Course Materials
Recovery Facility Operators (#198)
November 16th and 17th, 2001

And Has Successfully Completed the Required Examination
in Accordance with the Training Requirements
for Waste Processing Facility Operators in Florida

Signed this 4th Day of November, 2001

Chris S. Kohl

President

Kohl Consulting Inc.

Is Proud to Certify That

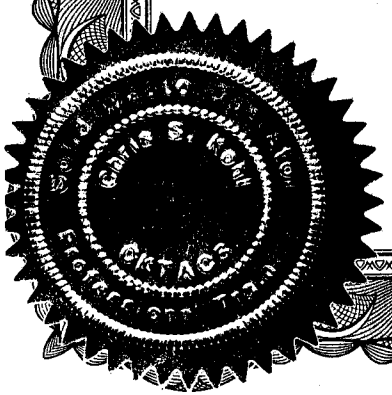
Peter Wolff

Has Successfully Completed the
8-Hour Initial Training Course for
Spotters at Class I, II, and III Landfills
Waste Processing Facilities, and C&D Sites Entitled :

Eight Hour Spotter Training for
Class I, II, and III Landfills, Waste Processing
Facilities, and C&D Sites (#203)

November 16th, 2001

And has completed the initial Training Requirement
for Spotters at Solid Waste Management Facilities in Florida



Signed this 4th Day of December, 2001

Chris S. Kohl

Chris S. Kohl

President

Kohl Consulting Onc.

Is Proud to Certify That

Jeffrey K. Biddle, Sr.

Has Successfully Completed the
8-Hour Initial Training Course for
Spotters at Class I, II, and III Landfills
Waste Processing Facilities, and C&D Sites Entitled :

Eight Hour Spotter Training for
Class I, II, and III Landfills, Waste Processing
Facilities, and C&D Sites (#203)

November 16th, 2001

And has completed the initial Training Requirement
for Spotters at Solid Waste Management Facilities in Florida

Signed this 4th Day of December, 2001

Chris S. Kohl

Chris S. Kohl

President

Kohl Consulting Inc.

Is Proud to Certify That

Neil Brains

Has Successfully Completed the
8-Hour Initial Training Course for
Spotters at Class I, II, and III Landfills
Waste Processing Facilities, and C&D Sites Entitled :
Eight Hour Spotter Training for
Class I, II, and III Landfills, Waste Processing
Facilities, and C&D Sites (#203)
November 16th, 2001
And has completed the initial Training Requirement
for Spotters at Solid Waste Management Facilities in Florida

Signed this 4th Day of December, 2001

Chris S. Kohl

Chris S. Kohl

President

Appendix F

Equipment List

Processing Equipment

Type Machinery And Make	Primary Recycling Use	Age	Engine Size	Capacity	# of Units
Komatsu payloader WA 30-5	presort, load, carry	1-3 yrs	29HP	.52 cu yd bucket	4
Komatsu payloader WA 320-1	load trucks, crusher	1-6 yrs	173HP	3 cu yd bucket	2
Read screen RD150-D	screen materials	5 yrs	49HP	50 Ts per hr	1
Nordberg City Crusher CC1007	crush concrete crush asphalt	3 yrs	100HP	80-100 Ts per hr	1
Komatsu payloader WA 380	load trucks reserve unit	4 yrs	200HP	4 cu yd bucket	1
Morbark grinder #7600	process wood mulch	3 yrs	900HP	100 Ts per hr	1
Maxigrind 460-6	process wood reserve unit	4 yrs	460HP	50 Ts per hr	1
Morbark color Machine #4000P	colorize mulches	1 yr	80HP	250 cu yds per hr	1
Komatsu excavator PC300-6	load screen	4 yrs	232HP	2 cu yd bucket	1
Shop built Scapler Screen	screen concrete	1 yr	NA	100 Ts per hr	1
Komatsu excavator PC180	load screen reserve unit	5 yrs	125HP	1 cu yd bucket	1
Hewitt Robbins 3 deck screen	screen materials reserve unit	3 yrs	50HP	100 Ts per hr	1
International Press & Shear	bail cardboard	4 yrs	10 HP electric	1500# bales	1

Rolling Stock

Type and Make	Primary Recycling Use	Age	Engine Size	Capacity	# of Units
Komatsu Off Road Truck HA 270	**off road material hauling**	**5 yrs**	**235HP**	**18 cu yds**	**1**
Mack Semi Tractors	**on road hauling**	**2-5 yrs**	**427HP**	**60-100 cu yds**	**3**
Mack Roll Off Trucks	**on and off road hauling**	**3-8 yrs**	**300HP**	**20-40 cu yds**	**3**
Mack lube truck	**service equipment**	**12 yrs**	**300HP**	**2000 gal diesel 100 gal oil, 100 gal hydraulic fluid, 100 gal waste oil**	**1**
International Service truck W/crane	**mobile truck and equipment repair**	**15 yrs**	**220HP**	**crane-5000 #**	**1**
GMC water truck	**dust control**	**15 yrs**	**200HP**	**1500 gal**	**1**
Mack water truck	**dust control**	**15 yrs**	**237HP**	**2500 gal**	**1**
Transfer trailers	**haul bulk products**	**1-10 yrs**	**NA**	**100 cy yds**	**5**

Appendix F

Motorized Equipment Specifications Listing

Komatsu: PC 180 LC3 Trackhoe

1 Equipped with Pemberton quick coupler

Attachments
1 2x3 demolition grapple
1 52" excavating bucket
1 Concrete densifier
1 60" ditch cleaning bucket
1 24" Esco rock bucket

Komatsu: PC 300 LC3 Trackhoe

1 Equipped with Pemberton quick coupler

Attachments
1 3x4 demolition grapple
1 52" excavating bucket
1 Concrete densifier
1 24" Esco rock bucket

Komatsu: WA 320 Payloader

1 Equipped with Pemberton quick coupler L series

Attachments
1 3 cubic yard excavating bucket
1 48" forks
1 Clearing rake

Komatsu: WA 320 Payloader

1 Equipped with Pemberton quick coupler L series

Attachments
1 3 cubic yard excavating bucket
1 5 cubic yard light materials bucket
1 48" forks
1 15' telescoping boom
1 Clearing rake

Komatsu: WA 180 Payloader

1 Equipped with Pemberton quick coupler (L) series

Attachments:

1 2 cubic yard-excavating bucket
1 3 cubic yard-excavating bucket
1 60" forks
1 15' telescoping boom
1 Clearing rake

(Two) 1984 Mack roll off trucks (RD 685-S)

Specifications

1 300 hp Mack engine
1 Equipped with 20k front axle and 44k rear axles
1 2090 9 speed transmission
1 60K Galbreth roll off hoist
25 Roll off containers in sizes 20-30-40 cubic yards

Mack: 1993 and 1994 RD 690S Dump Trucks

Specifications

1 F7 300 hp Mack engine
1 2070 7 speed transmission
1 11 x 22.5 rear tires
1 385R, 22.5 front tires
1 20 cubic yard Hardee dump body
1 175 gallon fuel capacity

Komatsu HA 270 Articulated Truck

Specifications

1 Rated payload 20 tons
1 Body capacity 144 cubic yards
1 3116 CAT engine @ 180 hp
1 OAW 8'11"

Eagle Jumbo 1200 Concrete Crusher

Specifications:

1 300 hp Caterpillar
1 100 tons per hour production

Mack: 1985 Lube Service Truck

Chassis specifications:

1 285 hp Mack 6 cylinder diesel engine
1 5 speed Mack transmission
1 38k rear axles
1 11 x 22.5 rear tires
1 385R 22.5 front tires
1 175 gallon fuel capacity

Service body specifications:

1 Custom designed and built by EWI of Orlando
1 750 gallon diesel fuel tank
1 5,125 gallon product tank
1 40 W tank
1 Hydraulic tank
1 10 W tank
1 Gear lube tank
1 Waste oil tank
1 120 pound grease keg
1 Air compressor/pressure cleaner
1 Water pump with 3" hose and miscellaneous hoses and nozzles

1980 Chevrolet C-60 Water Truck

Specifications:

1 2500 gallon water tank
1 454 cubic inch V-8 Chevrolet engine
1 Kubota pressure pump (100 GPM)
1 16' rear mounted spray bar
Miscellaneous hoses and nozzles

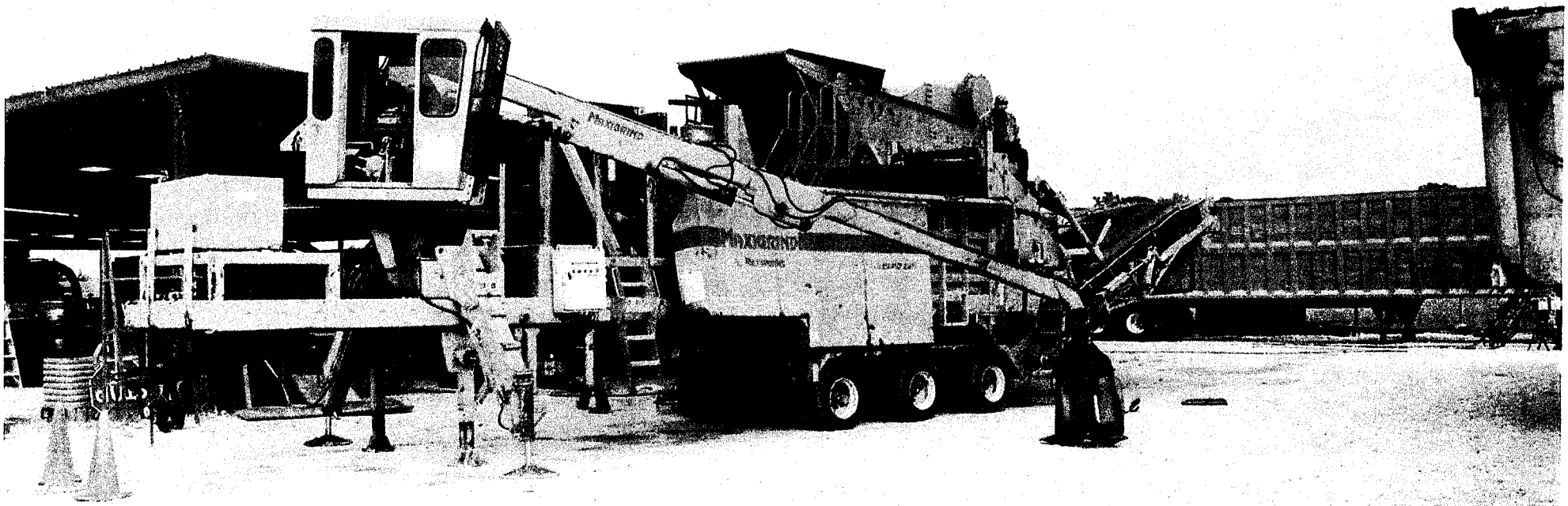
KOMATSU
Utility Corporation

WA30-5 COMPACT WHEEL LOADER

Flywheel Horsepower: 29 HP/21.3 kW
Bucket Capacity: 0.52 cu. yd. 0.4 cu. m
Operating Weight: 6,040 lb. 2740 kg

FEATURING

- **Hydrostatic Transmission (HST)** enables easy and powerful operations
- **Rear Axle Oscillation** offers a comfortable and stable ride
- **Automatic Bucket Leveler** improves cycle times
- **Low Noise Operation**



Maxigrind 460-6

CV-150-D
Specifications

Read Screen-All CV-150-D

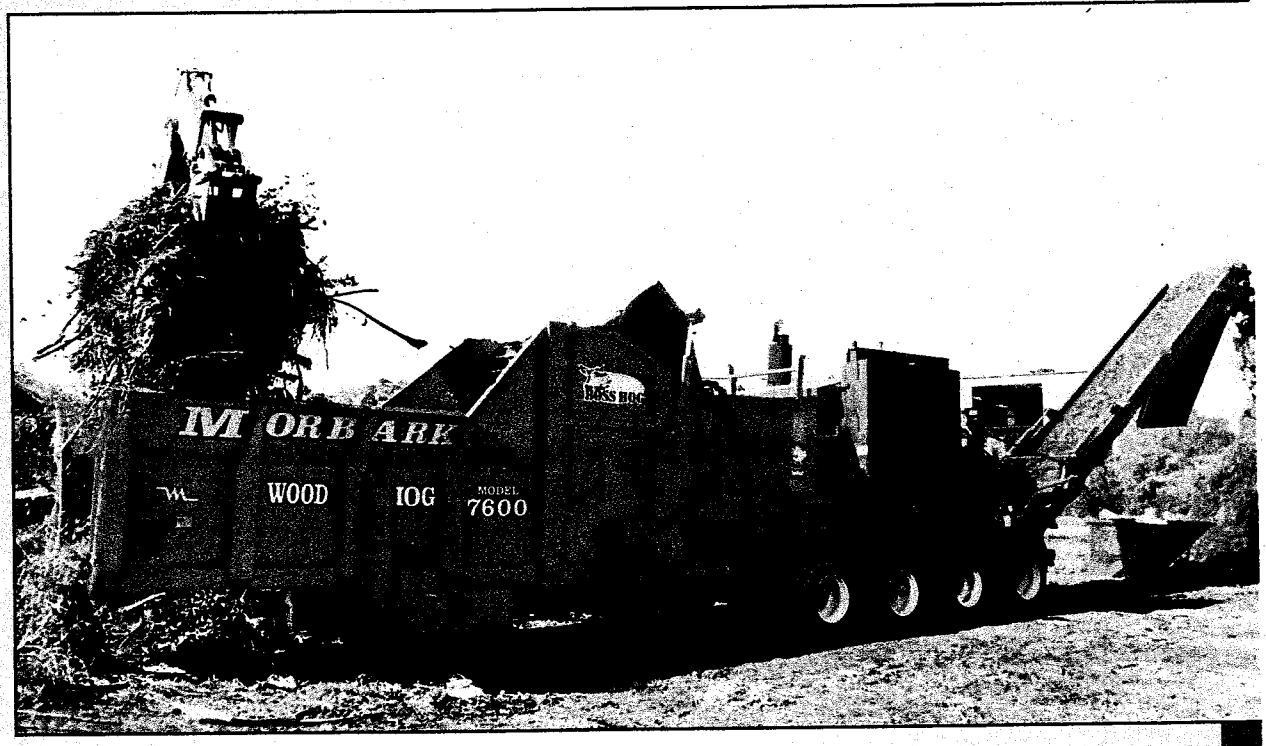
- Convertible shakerhead for increased job site versatility
- Shakerhead can accommodate either woven screen cloth, punch plate, harp screens or finger decks for custom applications
- Optional third deck
- 49 HP (36.6 kW), @ 1950 RPM John Deere, water cooled, diesel engine for powerful and reliable service
- Automatic shut-down system for unattended operation
- High impact areas constructed of Grade 80 high tensile steel for twice the strength of mild steel plate
- Patented casting plate for use with excavator
- Dual element air filter assembly for easy service and longer life

• *Proudly made in the U.S.A.* •

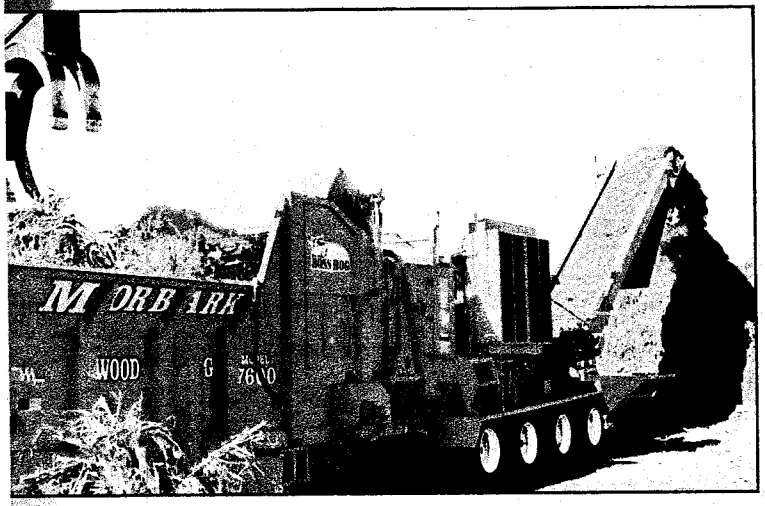
Morbark Wood Hog

Product Information

Model 7600



The Model 7600 Wood Hog, appropriately nicknamed the "Boss Hog", is the largest, most productive horizontal grinder ever manufactured by Morbark. Weighing in at 99,000 pounds, the Model 7600 is designed for high volume applications requiring rapid processing of a variety of wood waste, including yard trimmings, whole trees, stumps, pallets, ties, brush, mill waste and C & D debris. With horsepower options ranging from 860 to 1,050 HP and a huge 49½ inch diameter hammermill, the Boss Hog is capable of continuous product output in excess of 400 yards per hour, depending on the material being processed. In addition to its high production capabilities, the Model 7600 is engineered with a number of unique standard features focusing on operator friendliness, safety and ease of maintenance. For example, a full-sized hinged door permits unprecedented access to a spacious area behind the hammermill and grates with no bending or crawling required. From the pioneer in wood chipping and grinding equipment, the Morbark Model 7600 Boss Hog is a must see for those in the high production end of the organic grinding industry.



Morbark, Inc.

8507 S. Winn Road
P.O Box 1000
Winn, MI 48896

(800) 233-6065
(517) 866-2381
Fax (517) 866-2280

E-mail: inquire@morbark.com
Web site: http://www.morbark.com

MATERIAL PROCESSING ATTACHMENTS

PES SHEAR

US PATENT #5,224,268

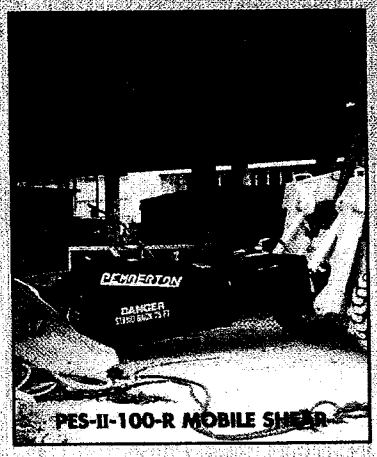
EXCAVATOR WEIGHT (lbs.)	7,500 12,000		15,000 24,000		25,000 35,000		36,000 48,000		49,000 65,000		66,000 82,000		83,000 95,000		95,000 150,000	
SHEAR MODEL	**PES 100-S**	**PES 100-R**	**PES 200-S**	**PES 200-R**	**PES 300-S**	**PES 200-R**	**PES 400S**	**PES 300-R**	**PES 500-S**	**PES 400-R**	**PES 700-S**	**PES 500-R**	**PES 900-S**	**PES 700-R**	**PES 1500-S**	**PES 900-R**
JAW OPENING (millimeters/inches)	254 10"	254 10"	457 18"	457 18"	559 22"	457 18"	686 27"	559 22"	813 32"	686 27"	902 35.5"	813 32"	965 38"	902 35.5"	1,168 46"	965 38"
JAW DEPTH (millimeters/inches)	279 11"	279 11"	508 20"	508 20"	609 24"	508 20"	737 29"	609 24"	864 34"	737 29"	953 37.5"	864 34"	991 39"	953 37.5"	1,168 46"	991 39"
ROTATION	Straight	360°	Straight	360°	Straight	360°	Straight	360°	Straight	360°	Straight	360°	Straight	360°	Straight	360°
WEIGHT (Kilograms/lbs.)	950 432	1,350 613	2,750 1,250	3,675 1,670	4,450 2,023	3,675 1,670	5,875 2,670	5,750 2,613	8,875 4,034	7,300 3,318	12,800 5,818	11,800 5,363	14,800 6,727	15,100 6,863	18,900 8,590	17,200 7,818

REACH - Please contact Pemberton Inc.'s engineering department for exact Reach dimensions. Machines vary due to bracket dimensions. Bolt-on universal brackets, standard brackets and machine booms will cause differences in specifications of Shear reach. Bolt-on brackets allow easy change over to other machines.

MODEL	SS-5500	SS-7000	SS-9000	SS-15000
EXCAVATOR WEIGHT (lbs.)	55,000	70,000	90,000	150,000
JAW OPENING	13"	16"	19"	Contact sales department
JAW DEPTH	18"	24"	30"	Contact sales department
EXCAVATOR Cylinder bore size	5.12"	6.0"	7.15"	8"
WEIGHT (Shear) (lbs.) Will vary per excavator	2,450	3,625	4,980	7,218

SS SHEAR

US PATENT #5,224,268



PES-II-100-R MOBILE SHEAR

MODEL	PES-100-R
JAW OPENING AND DEPTH	11"x11" 280X280mm
WEIGHT	1,350LBS 613KG
REACH (Average)	72" 1.8M

- FOR CRUSHING CONCRETE SLABS, PILINGS, PRECAST POLES, RCP PIPE, STEEL ENCASED BEAMS, SILOS & ETC.

MATERIAL DENSIFIER GRAPPLE

MODEL	EXCAVATOR WEIGHT	JAW OPENING	MAXIMUM MATERIAL THICKNESS	WEIGHT (lbs.)
MDG 50	25,000-35,000	24"	18"	1,700
MDG 100	36,000-46,000	30"	24"	2,700
MDG 200	46,000-65,000	36"	30"	3,625
MDG 300	65,000-88,000	42"	36"	4,250
MDG 400	88,000-111,000	48"	42"	5,600
MDG 500	111,000-144,000	54"	48"	8,800
MDG 600	145,000-200,000	60"	55"	9,700

- HARDENED STEEL BUSHINGS AT ALL HINGE POINTS...
- SPACER SPOOL MOUNTING BRACKET ARRANGEMENT ALLOWS INTERCHANGEABILITY AMONG MACHINES IN SAME WEIGHT CLASS

MODEL	SP-I	SP-II	SP-III	SP-IV
EXCAVATOR WEIGHT (lbs.)	35,000 48,000	49,000 65,000	66,000 82,000	83,000 95,000
JAW OPENING*	40"	49"	60"	72"
WEIGHT (lbs.)	3,300	4,150	4,980	6,450

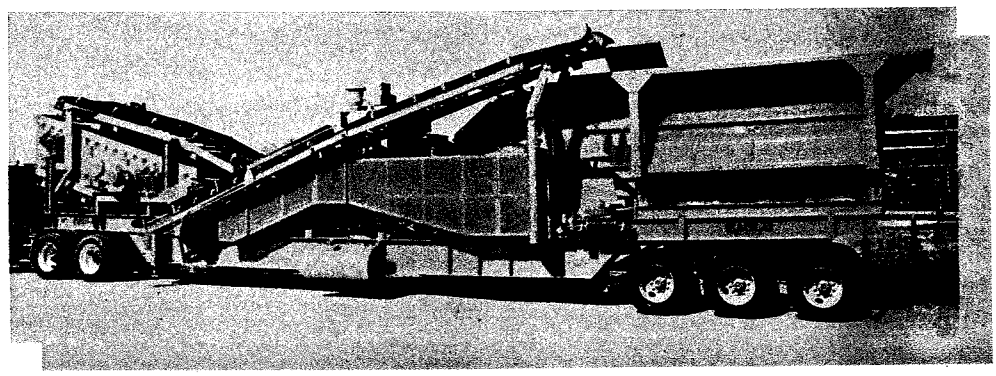
STUMP PULVERIZER

MODEL	WS-I	WS-II	WS-III	WS-IV
EXCAVATOR WEIGHT (lbs.)	35,000 48,000	49,000 65,000	66,000 82,000	83,000 95,000
JAW OPENING*	38"	48"	54"	66"
CUTTING LENGTH	26"	35"	46"	54"
WEIGHT (lbs.)	2,550	3,175	4,280	5,416

WOOD SHEAR

for Your Toughest Processin

Jumbo 1200-25 UltraMax® – The Ultimate "Combo" Plant!



Eagle's Portable Jumbo 1200-25 Closed-Circuit Crushing & Screening Plant.

Eagle's Jumbo 1200-25 UltraMax® Closed-Circuit Crushing *and* Screening Plant combines the superior operational efficiency of the new and technologically advanced Eagle UltraMax 25 Primary/Secondary Impact Crusher with the multi-product processing advantages of on-plant double-deck screening. Now, produce up to 4 *different,* high-volume products at the same time...3 with absolute sizing.

The Portable Jumbo 1200-25 "Combo" Plant has proven ideal for large custom crushing operations requiring: [1] high-volume, multiple product production...[2] precise product sizing...and [3] the ability to change product specifications rapidly.

A mammoth 18½' x 8½' *modular* charging hopper with efficient vibrating grizzly feeder is standard. Large hopper size required to keep the powerful 17-ton, 3-stage fixed blow bar impact crusher with its huge 48-inch feed opening adequately supplied during maximum production as a primary/secondary crushing and screening system.

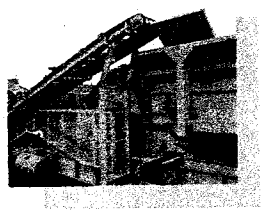
Designed for use in a wide variety of mining, processing, and recycling operations, the Jumbo 1200-25 can easily handle huge slabs of reinforced concrete, brick & block...ripped asphalt...C&D materials...limestone...traprock...sand & gravel...wood...and refuse. It has a designed-rated capacity of 150-300 TPH depending on conditions and specific products being made.

FEATURES:

- ✓ Standard DC-Powered, Hydraulic Lift/Leveling System.
- ✓ Powerful 17-ton, 3-Stage, Hi-Chrome or alloy steel, Fixed Blow Bar Impact Crusher with adjustable speed reduction.
- ✓ Mammoth 18½' x 8½' Charging Hopper with 18' x 45½" Vibrating Grizzly Feeder.
- ✓ Integral 5' x 16' Double-Deck Vibrating Screen.
- ✓ Built-in, Closed-Circuit Return Conveyor w/Internal Head Drive Pulleys.
- ✓ Folding and/or Reversible Side-Discharge Conveyors w/Internal Head Drive Pulleys.
- ✓ Built-in 325 continuous Hp Diesel and 100kW Generator.
- ✓ Powerful, Magnetic Separator [optional]

Standard, 24-Inch Return Conveyor [Closed-Circuit].

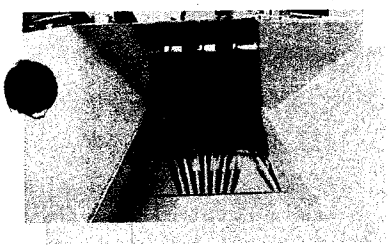
Starter Panel w/plug-in Power Jacks for all Support Equipment.



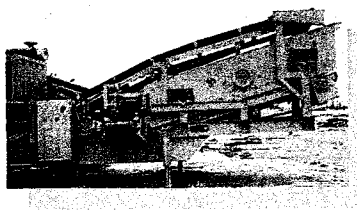
Exclusive, Hydraulically-Retractable Closed-Circuit Return Conveyor w/Hinged Return Chute

Internal Head Drive Pulleys on Cross & Return Conveyors

Mammoth Hopper w/Vibrating Grizzly Feeder.

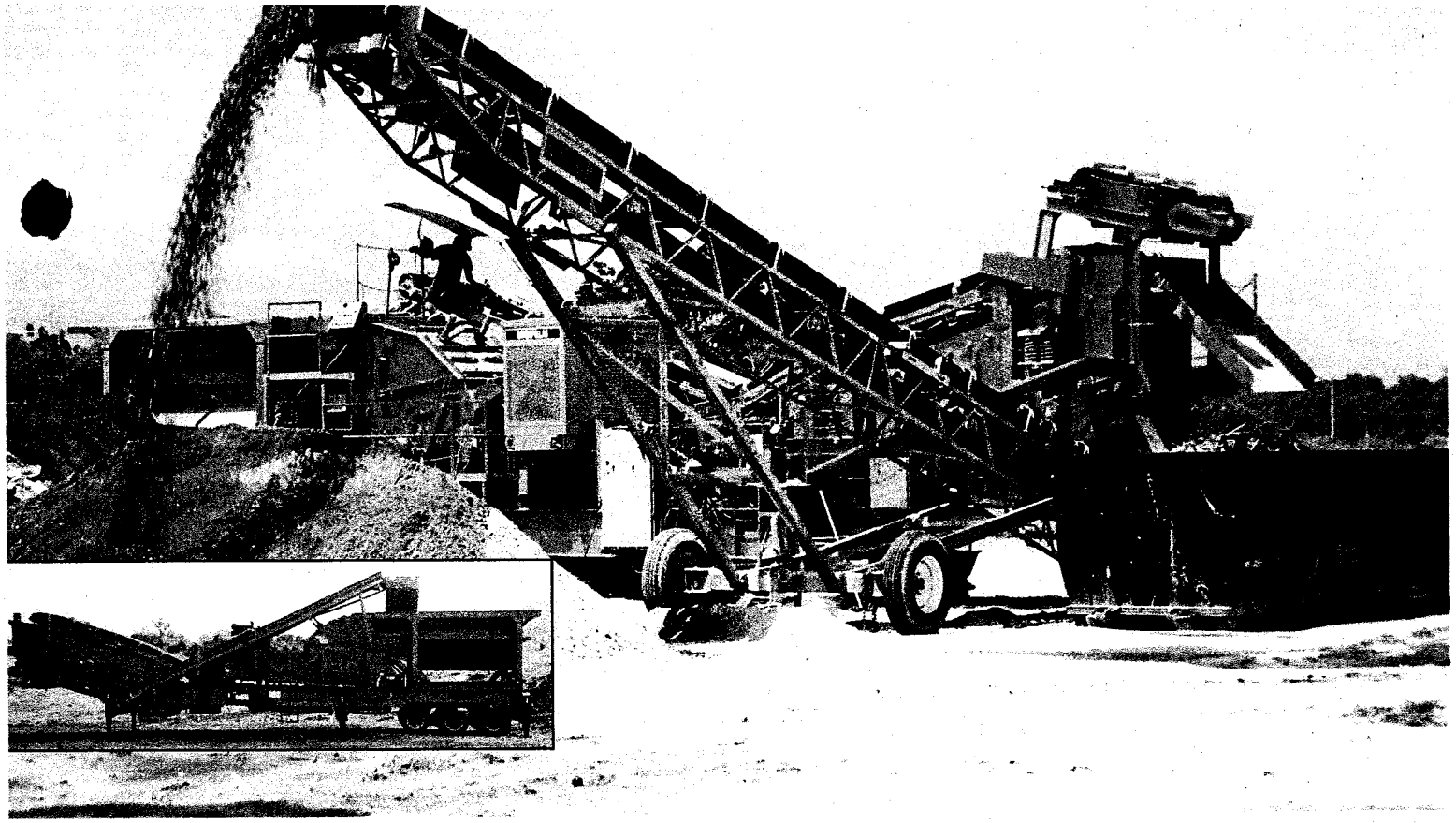


Integral 2-Deck Vibrating Screen [Magnetic Separator, Optional]



Reversible Side-Discharge Conveyor [Grizzly] w/Flop Gate Bypass.

DC-Powered, Hydraulic Lift/ Leveling System



Portable UltraMax® 1200-25CC

Closed-Circuit Crushing & Screening Combo Plant

Job Site Capacity: 250+ TPH production of two absolute-sized, simultaneously-produced products.

The most portable, closed-circuit plant with the largest production on the market today, the UltraMax 1200-25 is totally self-contained. On-plant, double-deck screening means big profit potential for the large, custom-crushing operation through high-volume, multiple-product production, precise product sizing and the ability to change product specifications rapidly. It's the "One Load Beast."

Plant Specs:

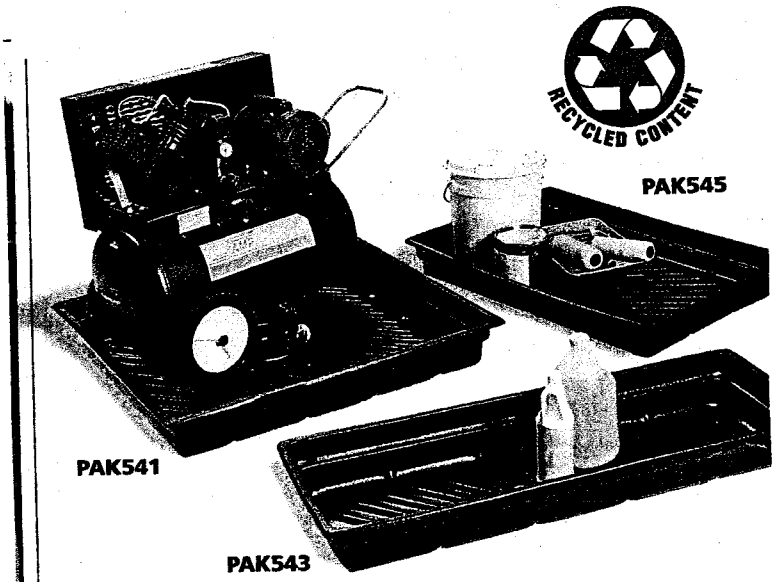
Crusher Size: 3-Stage, UltraMax 25 (32,500 lbs.)
Rotor Diameter & Width: 47" x 47"
Crusher Feed Opening: 48" x 34"
Feed Hopper: 17 cubic yds./23 tons
Vibrating Grizzly Feeder: 18' x 45-1/2" with 5' tapered step grizzly
Integral Double-Deck Vibrating Screen: 5' x 16'
Discharge System: 42" to double-deck screen
On-Plant Power Supply: 305 HP diesel & 100 kW generator; plant-mounted electrical panel
Fast Hydraulic Lift/Leveling System: Standard on-board, gas-powered; also used for secondary curtain settings & crusher access
Easy-Transport Travel Height: 13' 6"
Weight: 122,500 lbs.

From site to site, Florida-based concrete recycler Woodruff & Sons uses the highly-mobile UltraMax 1200-25. Setup using the hydraulic lift/leveling system is a mere 10-minute process, while at tear down Woodruff is ready to roll in about an hour. Plus, with the variable-speed feeder, the operator gets the last look at what goes in the crusher and can adjust the feed accordingly.

Eagle 2-deck vibrating screen for the simultaneous production of two absolute-sized, uniform

Retractable side-delivery conveyor for discharge of second-deck material.

Scapler Screen



100% recycled polyethylene (HDPE) Utility Trays offer environmentally-friendly storage.

- Made of high-density poly—won't rust or corrode
- Available in five sizes for a variety of temporary storage tasks

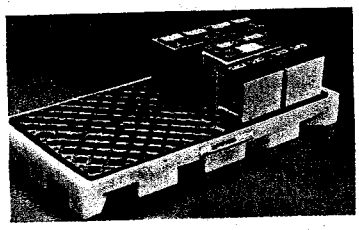
PIG® Utility Tray	1-3	4+
PAK541 • 1 each • 37.5"L x 34"W x 5.25"H 8 lbs.	$63	$59
PAK542 • 1 each • 48"L x 23.5"W x 5.25"H 7 lbs.	$42	$39
PAK543 • 1 each • 46"L x 16"W x 5.25"H 5 lbs.	$39	$37
PAK544 • 1 each • 48"L x 33"W x 5.25"H 9 lbs.	$79	$75
PAK545 • 1 each • 38"L x 26"W x 4.5"H 6 lbs.	$55	$52

M & G WILL INSTALL TRAY # PAK 542 ON EACH SHELF OF THE RUBBERMAID PLASTIC STORAGE CABINET FOR E-WASTE AND MISC. HAZ WASTE MATERIALS TO PROVIDE SPILL CONTAINMENT. THE STORAGE CABINET IS UNDER ROOF INSIDE OF THE

Good housekeeping starts with our Drip Decks!

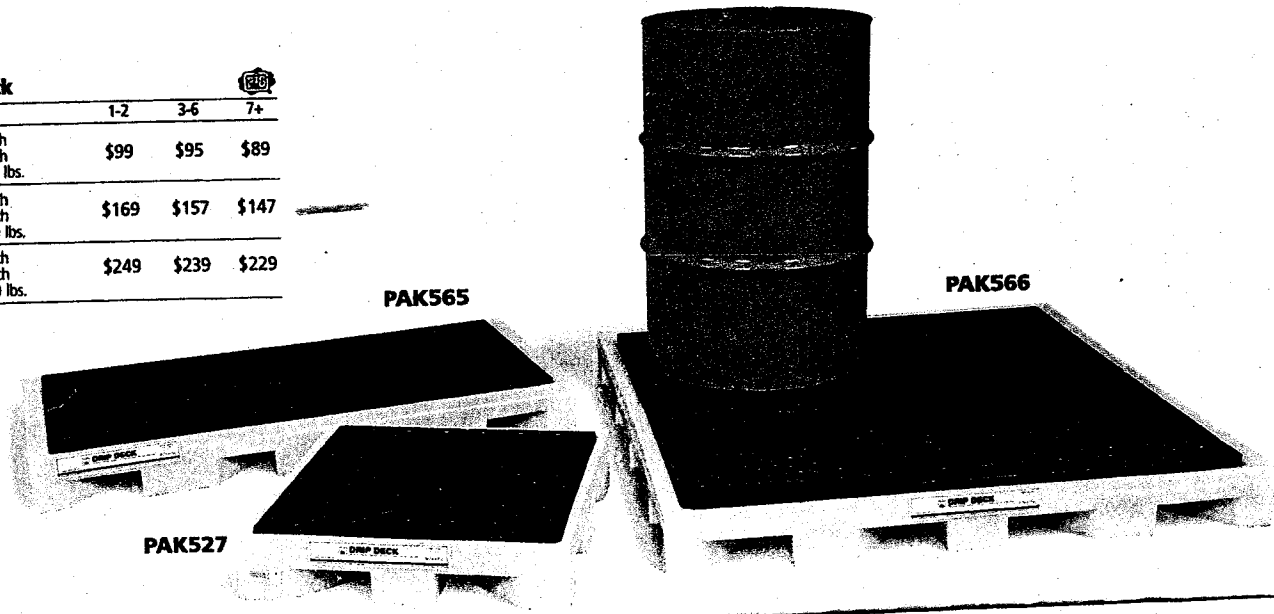
Not concerned about complying with regs? Just want to keep your facility clean? These Drip Decks capture drips and small spills before they ever hit your floor, helping you eliminate dangerous puddles and slick spots on your floors.

Low-profile 5¾" decks are easy to load and unload and give easy access to drum tops. Polyethylene construction makes these decks compatible with a wide variety of chemicals, and the removable grate gives you quick access to the sump for easy cleaning. 4-drum deck holds up to 44 gallons; 2-drum deck, up to 22 gallons; single drum deck, up to 11 gallons.



Protect your floors from caustic battery acids.

PIG® Poly Drip Deck	1-2	3-6	7+
PAK527 • 1-drum • 1 each Sump Capacity 11.0 gal./each 26"L x 26"W x 5.75"H • 20 lbs.	$99	$95	$89
PAK565 • 2-drum • 1 each Sump Capacity 22.0 gal./each 52"L x 26"W x 5.75"H • 40 lbs.	$169	$157	$147
PAK566 • 4-drum • 1 each Sump Capacity 44.0 gal./each 52"L x 52"W x 5.75"H • 70 lbs.	$249	$239	$229



M & L WILL INSTALL # PAK565 & PAK #527 ON THE FLOOR OF OUR ALUMINUM STORAGE CABINET THAT IS USED FOR BATTERY STORAGE TO PROVIDE SPILL CONTAINMENT. THE STORAGE CABINET IS UNDER ROOF INSIDE OF THE LEACHATE CONTAINMENT AREA.

Appendix G

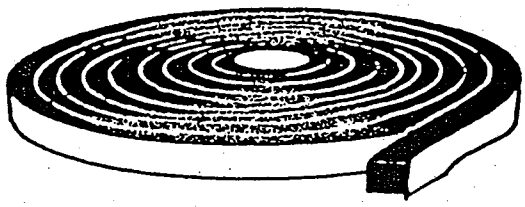
Materials Specifications

TECHNICAL DATA

BUTYL-LOK

BUTYL SEALANT SYSTEMS for the PRECAST CONCRETE INDUSTRY

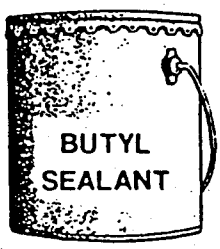
- PREFORMED TAPES



STANDARD SIZES IN STOCK
(CUSTOM SIZES AVAILABLE)

- CARTRIDGES

- TROWELABLE-PUMPABLE GRADE



- ADHESIVE-PRIMER SYSTEMS
  - -Water Emulsion Type (non flammable)
  - -Solvent Type (flammable)

A-LOK®

The Company with Connections

P.O. BOX 1647
TULLYTOWN, PA 19007
1-800-822-ALOK

697 MAIN STREET
TULLYTOWN, PA 19007
(215) 547-3366

GENERAL PRODUCT DESCRIPTION

BUTYL-LOK sealant systems are custom engineered and manufactured to comply with current standards and specifications required by Federal, State and local regulatory agencies for use by the precast concrete industry and its contractors.

BUTYL-LOK sealants are supplied in ready-to-apply forms for all weather installations and conditions. Specific applications are:

- SANITARY AND STORM SEWER MANHOLES
- PIPE - (ROUND, OVAL, FLATBASE, ELIPTICAL AND ARCH TYPES)
- BOX CULVERTS
- UTILITY VAULTS
- BURIAL VAULTS
- SEPTIC TANKS AND SEWAGE TREATMENT PLANTS
- WET WELLS
- PRECAST CONCRETE WALL PANEL SYSTEMS

BUTYL-LOK sealants remain permanently flexible and form permanent bonds to a wide variety of substrates including concrete, metals and plastics. These products are designed not to shrink or oxidize and have excellent resistance to environmental temperature extremes, acid and alkaline conditions. Adhesion and cohesion actually improves after joint has been formed and placed in service.

BUTYL-LOK meets or exceeds all basic requirements of Federal Specification SS-S-210-A and AASHTO M-198.

SURFACE PREPARATION

Joint surfaces should be clean and dry. Due to the high adhesive quality of BUTYL-LOK priming of the joint surfaces is not normally required. However, should wet or unusual application conditions exist, it is recommended that either BUTYL-LOK Emulsion (non flam) or Solvent (flammable) Adhesive-Primer be coated on the joint surface and allowed to dry a minimum of 10 minutes before application of joint sealant.

APPLICATION

BUTYL-LOK bonds instantly to joint surfaces and to itself. Always butt ends of preformed sealant together – never overlap. Leave protective release paper on sealant during application and remove only after structure is ready for coupling. The joint should then be coupled with sufficient pressure for proper joint completion. The resulting annular space after structure is properly coupled determines the volume (cross-section size) of BUTYL-LOK required.

CHEMICAL COMPOSITION

	TEST METHOD	REQUIREMENTS	BUTYL-LOK
Butyl Rubber-Hydrocarbon (% by wt.)	ASTM D-297	50 - 70	57.1
Inert Mineral Filler (% by wt.)	SS-S-210-A	30 - 50	42.0
Volatile Matter (% by wt.)	ASTM D-6	2.0 Max.	below 1%

*Note: Contains no asbestos fibers or asphaltics.

PHYSICAL PROPERTIES

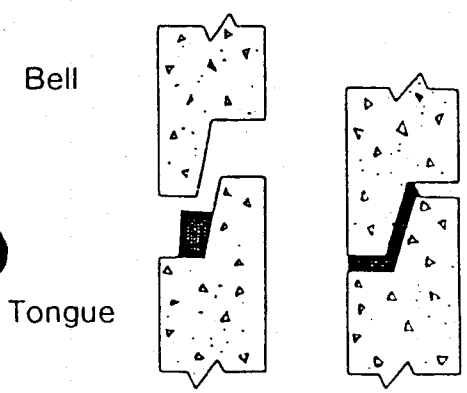
Specific Gravity @ 77°F.	ASTM D-71	1.2 - 1.35	1.244
Ductility @77°F.	ASTM D-113	5.0 Min.	100 +
Softening Point (°F.)	ASTM D-36	320 Min.	385
Penetration @77°F	ASTM D-217	50 - 120	90
Flash Point C.O.C. (°F.)	ASTM D-92	600 Min.	625
Fire Point C.O.C. (°F.)	ASTM D-92	625 Min.	638
Accelerated Aging (Mechanical Oven - 4 hours @ 212°F.)			Maintained 99 + % Solids (Flexibility not effected)
UV Resistance (Direct Florida Exposure - 365 days)			No Visible Damage
Elongation Initial @ 77°F.			300% Min.
Two Weeks @ 195°F.			300% Min.
Two Weeks - Total Water Immersion			300% Min.
Flow Resistance (1" wide overhead joint exposed to 135°F. for 7 days)			No Flow
Storage Life			Indefinite
Application Temperature Range			10 to 125°F.
Service Temperature Range			-40° to 215°F.

CHEMICAL RESISTANCE (Total Immersion - 30 Days)

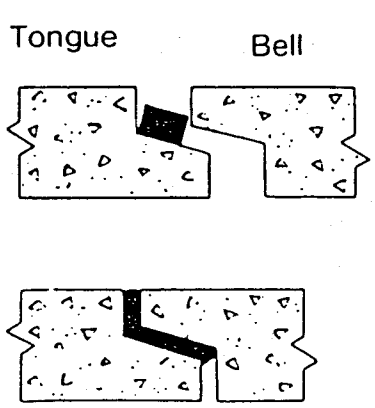
5% Sulfuric Acid	No Visible Damage
5% Hydrochloric Acid	No Visible Damage
5% Potassium Hydroxide	No Visible Damage
Saturated Hydrogen Sulfide Solution	No Visible Damage

TYPICAL JOINT CONFIGURATIONS

VERTICAL INSTALLATION



HORIZONTAL INSTALLATION



BUTYL-LOK SEALANT SYSTEMS

PREFORMED TAPES

PRODUCT NO.	DIAMETER EQUIVALENT	CROSS SECTION SIZE	ROLL LENGTH	ROLLS PER CARTON	FEET PER CARTON	CARTON WEIGHT	CARTONS PER PALLET*
FS-2050	½"	.45" x .45"	21.75'	12	261	35 lbs.	24
FS-2075	¾"	.675" x .675"	14.5'	6	87	25	24
FS-2100	1"	.89" x .89"	14.5'	6	87	42	24
FS-2125	1 ¼"	1.0" x 1.123"	14.5'	4	58	44	24
FS-2150	1 ½"	1.187" x 1.5"	10.75'	4	43	47	24
FS-2200	2"	1.875" x 1.675"	7.00'	4	28	52	24

*Note: All pallets shrink wrapped - suitable for outside storage.

Custom sizes available on request - Call us with your special requirements.

FM-3000 TROWELABLE - PUMPABLE GUIDE . . . . . Available in 5 Gallon pails

FR-900 1/10 Gallon CARTRIDGES . . . . . Packaged 10 tubes/case - 120 cases/pallet

FP-2000 ADHESIVE-PRIMER: EMULSION (non flammable) . . . . . 5 Gallon pails - 55 Gallon drums

FP-4000 ADHESIVE-PRIMER: SOLVENT TYPE (flammable) . . . . . 5 Gallon pails - 55 Gallon drums

HORIZONTAL JOINTS

PIPE SIZE (ID)	RECOMMENDED SIZES		
	1/64" to 1/4"*	5/16" to 1/2"*	9/16" to 11/16"*
12"	1/2"	3/4"	1"
15"	1/2"	3/4"	1"
18"	1/2"	3/4"	1"
21"	1/2"	3/4"	1"
24"	3/4"	1"	1-1/4"
27"	3/4"	1"	1-1/4"
30"	3/4"	1"	1-1/4"
33"	3/4"	1"	1-1/4"
36"	3/4"	1"	1-1/4"
39"	1"	1-1/4"	1-1/4"
42"	1"	1-1/4"	1-1/2"
45"	1"	1-1/4"	1-1/2"
48"	1"	1-1/4"	1-1/2"
54"	1-1/4"	1-1/2"	1-3/4"
60"	1-1/4"	1-1/2"	1-3/4"
66"	1-1/4"	1-1/2"	1-3/4"
72"	1-1/4"	1-1/2"	2"
78"	1-1/4"	1-1/2"	2"
84"	1-1/2"	1-3/4"	2"
90"	1-1/2"	1-3/4"	2"
96"	1-1/2"	1-3/4"	2"
102"	1-1/2"	2"	2"
108"	1-1/2"	2"	2"

VERTICAL JOINTS

ID OF STRUCTURE	RECOMMENDED SIZES		
	1/64" to 1/4"*	5/16" to 1/2"*	9/16" to 11/16"*
42"	3/4"	1"	1-1/4"
48"	3/4"	1"	1-1/4"
54"	1"	1"	1-1/2"
60"	1"	1-1/2"	1-1/2"
66"	1"	1-1/2"	1-1/2"
72"	1"	1-1/2"	1-1/2"
84"	1"	1-1/2"	1-3/4"
96"	1"	1-1/2"	1-3/4"

*The annular space of the joint is calculated by subtracting the tongue O.D. from the bell I.D. and dividing by 2.

A-LOK® PRODUCTS INC.

P.O. BOX 1647
TULLYTOWN, PA 19007
1-800-822-ALOK

697 MAIN STREET
TULLYTOWN, PA 19007
(215) 547-3366

ASSOCIATE MEMBER

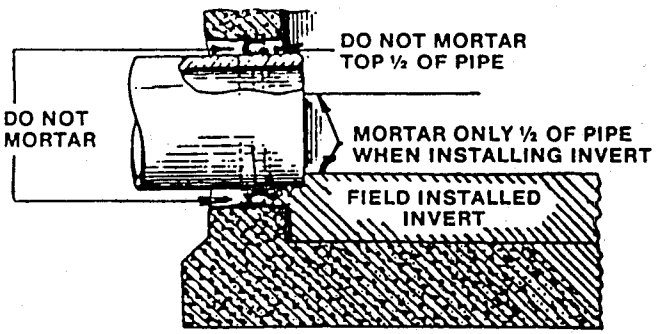
XP INSTALLATION INSTRUCTIONS

The XP connector is sized to fit the pipe barrel. Entry pipe should have a smooth outside surface and the correct diameter. Clean and lubricate XP connector and the pipe end to be inserted. Care should be taken to lube the entire portion of pipe which will slide through the connector. If pipe is cut, care should be taken to allow no sharp edges. A slight bevel is preferred as a lead and this should also be lubricated. After inserting pipe, stainless steel clamp should be fastened directly behind inner rubber "O" Ring. Pipe bedding on outside of manhole is critical as non-rigid pipe may ovate if not bedded properly.

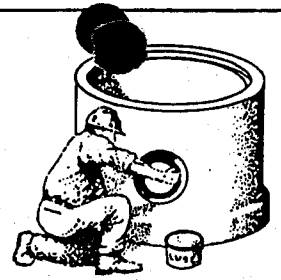
WARNING

Because of the XP connector's ability to insure a flexible, watertight joint, it is our strong recommendation that no mortar be placed around the connector at all on the outside of the structure and that no mortar be placed around the top half of the connector on the inside when completing the invert work. The use of mortar in either of these areas would eliminate the flexibility for which the connector is designed, and cause problems of shear.

★ CAUTION ★
WHEN INSTALLING PIPE STUBS FOR FUTURE PIPELINE, INSTALLATION OF ALL STUBS SHOULD BE PROPERLY RESTRAINED TO PREVENT ANY MOVEMENT.

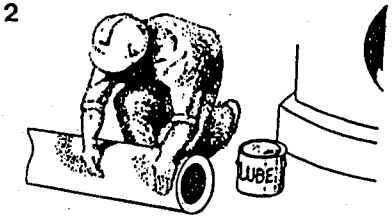


1



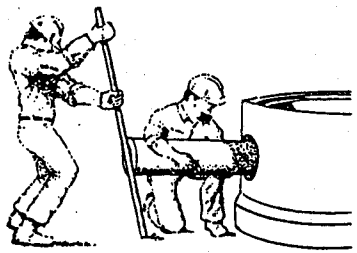
CLEAN & LUBRICATE GASKET

2



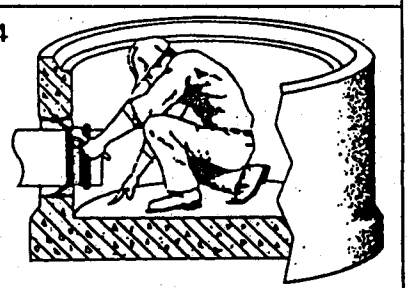
CLEAN AND COAT PIPE WITH LUBRICANT

3



CENTER PIPE & INSERT

4



INSTALL SS CLAMP & TIGHTEN

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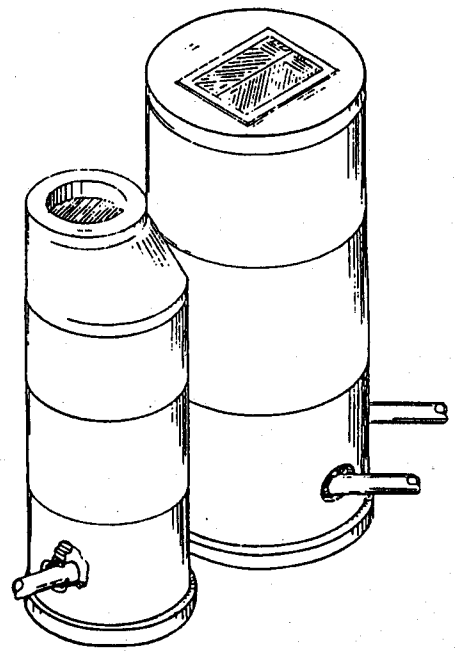
XP PIPE TO MANHOLE CONNECTOR INSTALLATION

C-109

ALL INFORMATION SUPERCEDES ALL PREVIOUS INFORMATION

XP®

MANHOLE PIPE CONNECTOR FOR SANITARY SYSTEMS



US PATENTS
4,746,127 4,387,900 5,054,794
4,711,455 4,903,970 4,890,863

CANADIAN PATENTS PENDING
1,296,872

A-LOK® PRODUCTS INC.

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DESCRIPTION:

The XP series is a high performance flexible connector designed to be hydraulicly expanded into a cored or preformed opening to provide a watertight connection for pipe penetrations into the manhole wall. The connector assembly consist of:

1) A Rigid Adjustable Expansion Ring 304 Stainless Steel
2) A 50 Durometer E.P.D.M. Gasket
3) A 302 Grade Stainless Steel Compression Clamp

All three components offer excellent chemical and corrosion resistance to materials that may be found in a sanitary sewer environment.

Installation of the XP connector into the concrete wall is accomplished by placing the connector and expansion ring into the center third of the concrete opening. The band is then expanded and locked by utilization of an expansion jack and porta-power unit to transmit the force required to seal the rubber connector against the concrete wall.

Field installation is achieved by inserting the pipe through the inner rubber o-ring and then fastening the stainless steel compression clamp to 60 inch pounds directly behind the o-ring.

SPECIFICATIONS:

The XP meets all the material and performance requirements of A.S.T.M. Standard C-923 titled "Resilient Connectors Between Concrete Manhole Structures and Pipes". Some requirements are given in the table below.

ADVANTAGES:

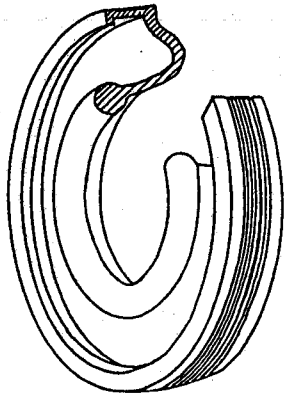
1) Depending on outside diameter of pipe the connector has the ability to allow up to 20 degrees omnidirectional deflection to permit for line adjustment.
2) A vertical or horizontal movement of .50 inch without loss of seal.
3) The inner rubber o-ring is designed to eliminate rubber wrinkling, compensate for pipe eccentricity and reduce the number of connectors required to cover all sizes of pipe.
4) The XP connector assures a positive watertight connection that eliminates infiltration due to shear or ground movement.
5) Immediate backfill is permitted enhancing project safety and overcoming problems encountered with unstable trench conditions.

DIMENSIONAL DATA

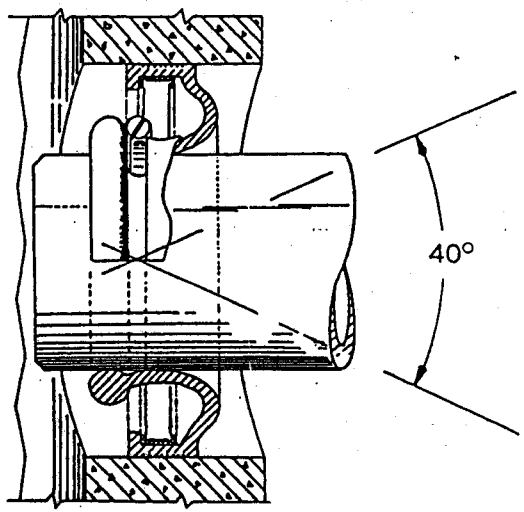
XP CONNECTOR NO.	PIPE O.D. (Inches)		HOLE DIAM.
	MIN.	*MAX.	
C109-5/10	4.25"	5.00"	10"
C109-8/11	7.50"	8.50"	11"
C109-4/12	4.12"	5.00"	12"
C109-6/12	6.25"	8.00"	12"
C109-8/12	8.25"	9.50"	12"
C109-10/14	9.75"	11.25"	14"
C109-12/16	11.50"	13.00"	16"
C109-14/18	13.50"	16.25"	18"

*NOTE: Bevel and lubricate when coupling diameters that reach maximum dimensions.

This supercedes all previous information and is subject to change without notice.



CROSS SECTION OF XP



CROSS SECTION OF XP AFTER INSTALLATION

RESILIENT TEST REQUIREMENTS of A.S.T.M. C-923

Test	Test Requirements	ASTM Method	Median Test Results
Chemical resistance:		D 543, at 22°C for 48 h	
1 *N* sulfuric acid	no weight loss		+0.16%
1 *N* hydrochloric acid	no weight loss		+0.24%
Tensile strength	1200 psi or 8.5 MPa, min	D 412	1870 psi
Elongation at break	350%, min		670%
Hardness	+5 from the manufacturer's specified hardness	D 2240 (Shore A durometer)	50
Accelerated oven-aging	decrease of 15%, max. of original tensile strength, decrease of 20%, max. of elongation	D 573, 70 + 1°C for 7 days	1880 psi +0.53% 840% −4.48%
Compression set	decrease of 25%, max. of original deflection	D 395, Method B, at 70°C for 22 h	19.42%
Water absorption	increase of 10%, max. of original by weight	D 471, immerse 0.75 by 2-in. or 19 by 25-mm specimen in distilled water at 70°C for 48 h	+0.87%
Ozone resistance	rating 0	D 1171	0
Low-temperature brittle point	no fracture at -40°C	D 746	pass
Tear resistance	200 lbf/in. or 34 kN/m	D 624, Method B	299

SPARLING INSTRUMENTS CO., INC.

SERIES 600
MAGNETIC FLOWMETERS

MODEL 655 TIGERMAG™
FLANGED ELECTROMAGNETIC FLOWMETER

PDS-655
Issue Date: July 1996
Supersedes: December 1995

DESCRIPTION

The Model 655 is a microprocessor-based electromagnetic flowmeter utilizing the latest bi-polar pulsed DC technology. It is designed to measure the flow of conductive liquids in full pipes. The sensor liner may be polyurethane, neoprene, hard rubber, soft rubber or Teflon. In sizes through 4" ceramic (aluminum oxide) is offered as an optional liner material. The electrodes are 316 stainless steel (others are optional). The Model 655 is available in sizes 1/2" - 72", combining technically advanced circuitry with ease of installation, setup and maintenance-free operation.

APPLICATIONS

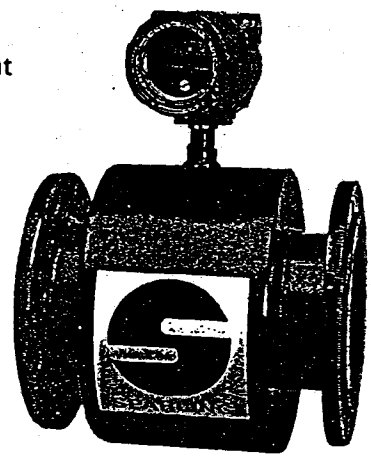
Potable Water, Process Chemicals, Wastewater, Raw Sewage, Polymers, Acids, Sludges, Slurries, Recirculating Water, Cooling Water, Wastewater Treatment Plant Flows.

PRINCIPLE OF OPERATION

The Model 655 magnetic flowmeter operates in accordance with Faraday's Law which states that the voltage induced in a conductor moving through a magnetic field is proportional to the velocity of that conductor. The magnetic meter utilizes liquid as the conductor.

STANDARD FEATURES

- Two year warranty
- Bi-polar pulsed DC coils
- Auto Zero
- FM Approved for Class I, Division 1 & 2 Groups B, C, D., Class II, Groups E, F, G
- CE Approved
- CSA Approved for Class 1, Division 2
- Cenelec Approved (optional)
- Proven TIGERMAG™ Electronics with MAG-COMMAND™
- NEMA-4X and NEMA-7 explosion proof enclosures
- NIST-Traceable Calibration
- Flanged Design
- Low Flow Cut-off
- Built-in Noise Rejection
- Field Programmable
- Selectable Damping.
- User-defined Engineering Units
- Bi-directional Flow
- Positive Zero Return
- Isolated Analog Output
- Scaled Pulse Output.
- Self-test Function
- Password Protection
- 16 Digit Display, Rate and Total



INSTALLATION

The Model 655 can be installed in any orientation from vertical to horizontal. Exposure to excess vibration should be avoided. The meter must be mounted at a point in the line which is always full of process liquid under flowing conditions. A vertical installation with liquid flowing up is ideal in that it assures a full pipe.

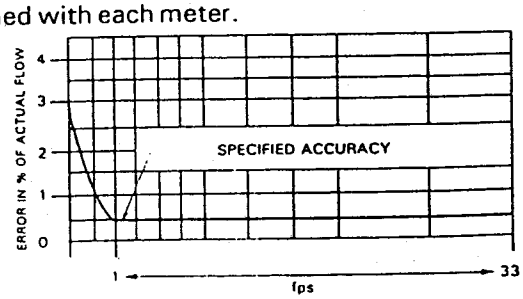
Only three diameters of straight pipe length are required from the center of the meter to normal obstructions to obtain specified accuracies. Partially open valves, 45° elbows, thermocouple wells and pump discharges will require longer straight pipe lengths.

Proper grounding is important. The use of grounding rings is recommended to obtain rated accuracy.

The FM655 utilizes an advanced switching power supply that accommodates voltages from 77-265 Vac 50/60 Hz (12-60 Vdc optional).

CERTIFIED ACCURACY

Each TIGERMAG™ is wet-flow calibrated in Sparling's Primary Flow Lab traceable to the National Institute of Standards and Technology. A certificate of accuracy is furnished with each meter.



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Phone (818) 444-0571 • Fax (818) 444-2314

MEMBER
Measurement Control & Automation Association

ISO 9001

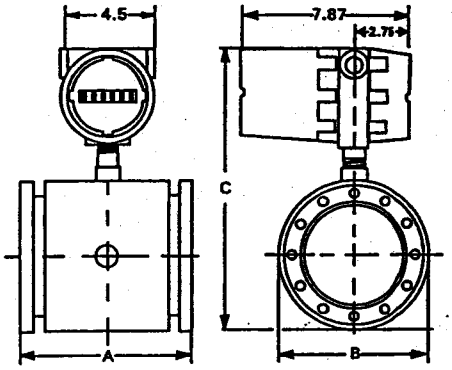
FLOW AND DIMENSIONAL DATA

NOMINAL METER SIZE (mm)	(in.)	Accuracy at 1 FPS	FULL SCALE GPM MIN 3 FPS	MAX 33 FPS	DIMENSIONS IN INCHES A	B	C	APPROX. WEIGHT (lbs.)	(kg.)
12	0.5	0.9 ± 1.0%	2.7	29	4.06	3.50	9.60	15	7
25	1	2.3 ± 0.5%	6.9	76	4.06	4.25	10.00	15	7
40	1.5	5.5 ± 0.5%	16.5	182	4.06	5.00	11.10	20	10
50	2	9.8 ± 0.5%	29.4	323	4.06	6.00	12.00	20	10
80	3	22.9 ± 0.5%	68.8	757	6.06	7.50	14.00	30	14
100	4	40.4 ± 0.5%	121	1333	6.06	9.00	15.10	35	16
150	6	85 ± 0.5%	254	2800	13.00	11.75	18.25	75	24
200	8	145 ± 0.5%	436	4800	13.00	14.25	20.75	105	48
250	10	236 ± 0.5%	709	7800	17.75	17.13	23.63	155	70
300	12	333 ± 0.5%	1000	11000	19.00	20.13	26.63	235	107
350	14	409 ± 0.5%	1227	13500	20.88	22.88	29.38	365	166
400	16	545 ± 0.5%	1636	18000	22.88	24.63	31.13	460	209
450	18	667 ± 0.5%	2000	22000	26.75	26.13	32.63	555	252
500	20	879 ± 0.5%	2636	29000	27.13	28.63	35.13	625	284
600	24	1273 ± 0.5%	3818	42000	32.25	33.13	39.63	860	391
750	30	1909 ± 0.5%	5727	63000	43.00	39.88	46.38	1325	602
900	36	3175 ± 0.5%	9630	95255	47.25	45.00	51.50	1800	818
1050	42	4350 ± 0.5%	13000	142650	51.25	53.25	59.75	2280	1036
1200	48	5600 ± 0.5%	16900	186000	51.63	59.50	64.75	3500	1590
1350	54	7144 ± 0.5%	21433	235800	53.00	67.50	74.00	4000	1818
1500	60	8500 ± 0.5%	25500	280500	65.00	74.00	79.75	5200	2364
1650	66	10300 ± 0.5%	31000	341000	65.00	81.00	86.25	6500	2955
1800	72	12700 ± 0.5%	38100	419100	72.00	88.00	94.50	9000	4091

Special Construction (High temperature coils required when temperature exceeds 266° F)

NOTE:

1. Dimensions for 150 lb. flanges. Allow 1/8" to 1/4" for liner. Allow 1/4" for grounding rings (1/2" - 6" meters). Allow 1/2" for 8" meters and larger.
2. For wafer-style meters, see Product Data Sheet 625 (sizes 1/10" - 4").
3. Special length Carbon steel mounting bolts and gaskets are furnished for meter sizes 1/2", 1".
4. Flow rates shown for meter sizes 1/2" - 4" are for meters with Teflon liners. See PDS 625 for flow rates for ceramic-lined sensors.



HOW TO ORDER A MODEL 655

Base Model Number

FM655 - Table 1 Magnetic Flowmeter

Size - Table 2

OD = 1/2", OF = 1", OG = 1-1/2", 02 = 2", 03 = 3", 04 = 4", etc.

Table 3 - Liner Material

1	Hard Rubber	(6" to 72")	5	Polyurethane	(6" to 48")
2	Soft Rubber	(6" to 72")	6	Ceramic liner (*)	(0.5 to 4")
3	*Teflon*® PTFE	(0.5" to 36")	9	Neoprene	(6" to 72")

Table 4 - Electrode Material

1	316SS	4	Titanium	8	Zirconium
2	Hastelloy C	5	Tantalum	6	Fused Platinum(*) ceramic only
3	316SS Bullet Nosed	7	Platinum (*)	9	Monel

Table 5 - Flange Rating

1 150 lb.
3 300 lb.

Table 6 - Transmitter and Mounting

0 Integral NEMA-4X/NEMA-7 enclosure
1 Remote enclosure, 15' cable
3 Same as 1, with accidental submergence proof sensor
4 Same as 1, with permanent submergence proof sensor

Table 7- Other Options (Ceramic models only)

0 Standard O-rings (ceramic liners only)
1 EPR O-rings only (ceramic liners only)
2 Kalrez O-rings only (ceramic liners only)

Special Notes for Construction

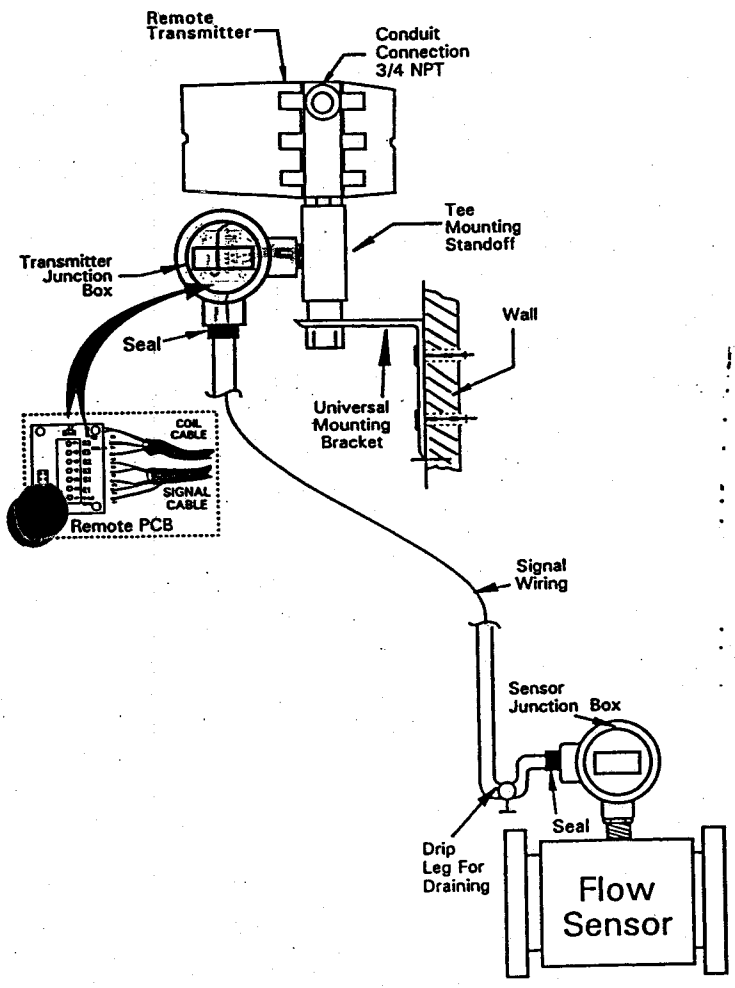
____ Hart® protocol
____ High temperature coils - required for temperatures over 266°F (Must be ordered with a remote mount option from Table 6)
  ____ Ceramic liner - max temp 420°F (includes Kalrez O-Rings)
  ____ Ceramic liner/fused electrodes - max temp: 420°F (O-Rings not req'd.)
  ____ *Teflon*® liner - max temp: 300°F
____ Special cable length (over 15 feet = $5.00/ft. - Max. 100 ft.)
____ Hot Tap removable electrode design (6" and above only)
____ Removable electrode design (6" and above only)
____ Empty Pipe Detection
____ Cenelec Approval

FM655- _ _ _ _ _ _ _

(*) Some ceramic liner sizes are available with Platinum fused electrodes (steel housings only).

REMOTE MOUNTED TRANSMITTER

Remote mounting of the electronics is required for high temperature operation (over 212°F or 100°C), when pipe vibration is excessive, or when flooding is possible. Connections for power and signal are made in the transmitter housing. A bracket for wall/pipe mounting is furnished as part of the optional remote mounting kit. Interconnecting cable is supplied between the sensor and transmitter enclosure. Also supplied is a sensor mounted NEMA-7 rated junction box in which coil and electrode connections are made.



Remote Mounted Transmitter
Figure 1

PZR – Positive Zero Return

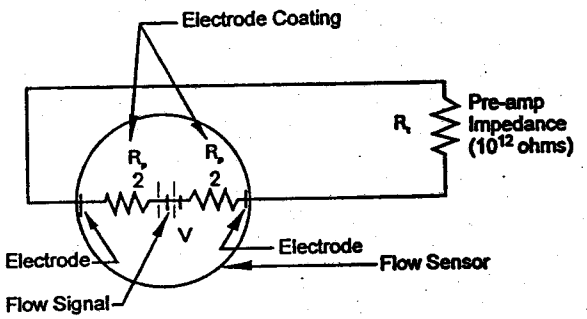
PZR is activated by closing a contact which drives the meters 4-20 mA output to zero. This is useful when process lines are empty or the flow to the meter is shut off.

EMPTY PIPE DETECTION (optional)

The SparlingTIGERMAG™ is designed to detect absence or inadequate volume of process fluid in the pipe and will hold the output signal to 4 mA or zero. One of the most important values of this feature is that it prevents false totalization possible with other meters under partially filled pipe conditions.

HI-Z CIRCUITRY

The SparlingTIGERMAG™ provides superior performance in liquids which tend to deposit non-conductive coatings. The TIGERMAG™ incorporates Hi-Z circuitry which utilizes a high input impedance in the transmitter's pre-amplifier (10^{12} ohms). (See Fig. 2). If the impedance of the coating is negligible as compared to the impedance of the receiving instrument, then the voltage drop across the electrode coating will also be negligible. This eliminates the need for electrode cleaners.

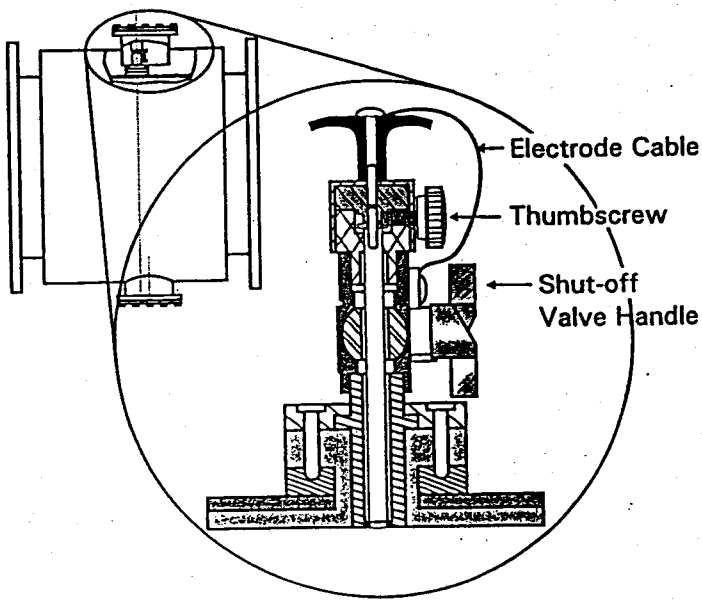


Hi-Z Circuitry
Figure 2

REMOVABLE ELECTRODES (option)

Two configurations of removable electrodes are available in sizes 6" or greater for all FM655 meters. The first is removable after the line has been depressurized and drained. Removal is performed with an 11/32" nut driver and a 3/4" socket wrench.

The second is the "hot-tap" electrode which allows electrode replacement while system is still under pressure, without disturbing the process flow. Removal can be easily performed with a phillips screwdriver and a crescent wrench. Special locking catches were designed to prevent high pressure accidents during electrode removal. The shut-off valve must be closed before the electrode may be removed.



Hot-tap Electrode
Figure 3

SPECIFICATIONS

Accuracy: (Frequency Output)	±0.5% of rate (1-33 fps) 1"-4" ±0.01 ft/sec. below 1.0 ft/sec. ± 0.01 fps below 1.0 fps ±1.0% of rate (1-33 fps) for units smaller than 1"
[redacted]perature Effect:	±0.025 % FS/°C
Full Scale Velocity Ranges:	From 0-3 to 0-33 fps (0-1 to 0-10 mps)
Minimum Velocity:	0.3 fps (0.1 mps)
Repeatability:	Within ±0.1% full scale
Electrodes:	Stainless steel standard (others available)
Liner:	Polyurethane, hard rubber, soft rubber, Teflon, Ceramic (Teflon or Ceramic 1/2" - 4" only)
Outputs:	Simultaneous isolated analog and digital Analog: 0 to 20 (standard) or 4-20 mAdc (optional) into 800 ohms max. Digital: Scaled pulse or frequency (selectable) a. Scaled, 24 Vdc pulse with 25/50/100 ms on-time width, 0-10 Hz max (up to 50ms on time) into 150 ohm impedance min. b. Scaled frequency. 15 Vdc square wave, 50/50 duty cycle, 0-1000 Hz max.
Mag-Command™:	Selection and change of meter parameters by magnetic probe without opening the enclosure
Display:	16 Digit alphanumeric LCD (rate and total)
Conductivity:	Minimum 5 micromho/cm
Power Requirements:	77 - 265 Vac 50/60 Hz (12-60 Vdc optional)
Power Consumption:	Less than 11 VA
Enclosures:	
[redacted] Transmitter:	Cast aluminum epoxy coated. Integral or remote mounted (NEMA-4X and NEMA-7)
Sensor:	304SS flow tube. Carbon Steel flanges and welded coil enclosures. Epoxy coated
Electrical Rating[1]:	FM Approved for Class I, Division 1 Groups B, C, D; Class II Groups E, F, G CSA Approved for Class 1, Division 2 CE Approved
Pre-amp Impedance:	10^{12} ohms minimum
Ambient Temp:	-20° to 140°F (-30° to 60°C)[1]
Process Temp:	
Integral Mount:	Hard rubber, Soft rubber, Neoprene and Polyurethane ..... -40 - 180°F Teflon, Ceramic ..... - 40 - 212°F
Remote Mount(opt)	Teflon, Ceramic ..... - 40 - 266°F
High Temp Coils (opt)	Teflon ..... - 40 - 350°F Ceramic ..... - 40 - 420°F
Selectable Damping:	0-99 sec
End Connections:	150 lb. or 300 lb.[2]
Low Flow Cut-off:	Selectable 0 - 9% FS

Options:

- Remote Mounted Enclosure
- Empty Pipe Detection
- Electrode materials: Hastelloy C, Zirconium, Platinum, Monel, Tantalum & Titanium
- 12-60 Vdc operation
- High Temperature Coils
- Digital Communications (HART Protocol)
- Accidental or Permanent Submergence-proof
- Removable Electrodes (6" & up)
- Hot-Tap Removable Electrodes (6" & up)
- ±0.5% of rate accuracy on 1/2" meters
- Hookup for 48 Vdc battery backup available for 77-265 Vac Service
- Cenelec approval

1. High Temperature Display 158°F (70°C)
2. FM Approval applies to 150 psi only.

TEFLON® is a trademark of E.I. DuPont

MODEL FM-655 SPECIFICATIONS

1.0.0 The magnetic flowmeter shall be microprocessor-based, and flanged. It shall indicate, totalize, and transmit flow in full pipes.

1.1.0 The magnetic flowmeter shall utilize DC bi-polar pulsed coil excitation, automatically re-zeroing after every cycle.

1.1.1 The accuracy shall be ± 1% on size 1/2" and ± 0.5% of rate on sizes 1"-72" of rate over a 33:1 turndown at all flow rates above 1 fps. Accuracy shall be verified by calibration in a flow laboratory traceable to the NIST.

1.1.2 The flow sensor liner shall be Polyurethane, Hard Rubber, Soft Rubber, Neoprene, Teflon or Ceramic.

1.1.3 The integrally mounted flow sensor and transmitter shall be FM approved for Class I, Division 1, Groups B,C,D and Class II, Division 1, Groups E,F,G environments without use of air purge. CSA approved for Class I, Division 2. Optional Cenelec approval available.

1.1.4 The electronics shall be integrally or remote mounted.

1.1.5 If remote mounted, the flow sensor and transmitter shall retain NEMA-4X and NEMA-7 ratings. The transmitter shall be furnished with integral universal wall/pipe stand mounting bracket and 15 feet of cable (standard).

1.1.6 The remote mounted flowsensor may be either accidental submergence-proof 30ft/48 hours or permanent submergence proof and retain NEMA-4X and NEMA-7 ratings

1.2.0 The flowmeter electrodes shall be 316SS, titanium, tantalum, zirconium, platinum, fused platinum, monel or hastelloy C.

1.3.0 The meter shall incorporate HI-Z circuitry. The preamplifier input impedance shall not be less than 10^{12} ohms. External ultrasonic electrode cleaners shall not be acceptable.

1.4.0 Available outputs shall be 1) Isolated analog 4-20 mAdc into 800 ohms standard; 2) scaled pulse 24 Vdc with selectable 25/50/100 ms on time, maximum frequency 10 Hz or 0-1000 Hz frequency, for 0-100% flowrate, 15 Vdc; 3) fault, with open collector; 4) flow direction with open collector; 5) Positive Zero Return (PZR) for external relay contacts. Output 2 can be open collector if required.

1.5.0 Low flow cutoff shall be adjustable from 0 - 9% FS.

1.6.0 A 16-character alphanumeric display shall indicate user-defined flow units and total flow. All menu advice and commands shall be viewed on this display.

1.6.1 The flowmeter shall incorporate the MAG-COMMAND feature allowing menu selection and changes to be made from outside the housing via hall-effect sensors. It shall not be necessary to remove covers, panels or fasteners to accomplish calibration or program changes.

1.6.2 The meter shall have an output current check function exercised by MAG-COMMAND or communicator which will increment the current from 4 to 20mA to allow the checking of attached instruments without the running of liquids thru the process pipes.

1.6.3 The meter shall incorporate a built-in input simulator to allow the simulation of a fixed flowtube signal to the front-end of the electronics without externally connected devices or the running of liquids thru the process pipes.

1.6.4 The meter software shall incorporate a password feature preventing inadvertent program changes.

1.7.0 The flowmeter shall have a switching power supply having an operating range from 77 - 265 Vac 50/60 Hz or 12-60 Vdc option.

1.8.0 All printed circuit boards shall be contained in a plug-in module and be interchangeable for any size without requiring test equipment.

1.9.0 The flowmeter shall be inherently bi-directional.

2.0.0 The flowmeter manufacturer shall have meters of the DC pulse type in similar flowing mediums for a minimum of five years.

2.1.0 The manufacturer shall provide an application performance guarantee with submittals.

2.2.0 The flowmeter shall be warranted against defective workmanship or materials for a period of two years from shipment date.

3.0.0 Totalized flow and programmed configuration shall be maintained in memory for up to 10 years.

4.0.0 The flowmeter shall be MODEL 655 TIGERMAG™ as manufactured by Sparling Instruments Co.

Specifications subject to change without notice.

Hart® is a registered trademark of Rosemount.

CHARLOTTE
PIPE AND FOUNDRY COMPANY
P.O. Box 35430 • Telephone 704/372-5030
CHARLOTTE, NORTH CAROLINA 28235

ASTM D-1785

PVC

ASTM D-2665

SCHEDULE-40 DWV
AND
TYPE I PVC
PIPE

NSF

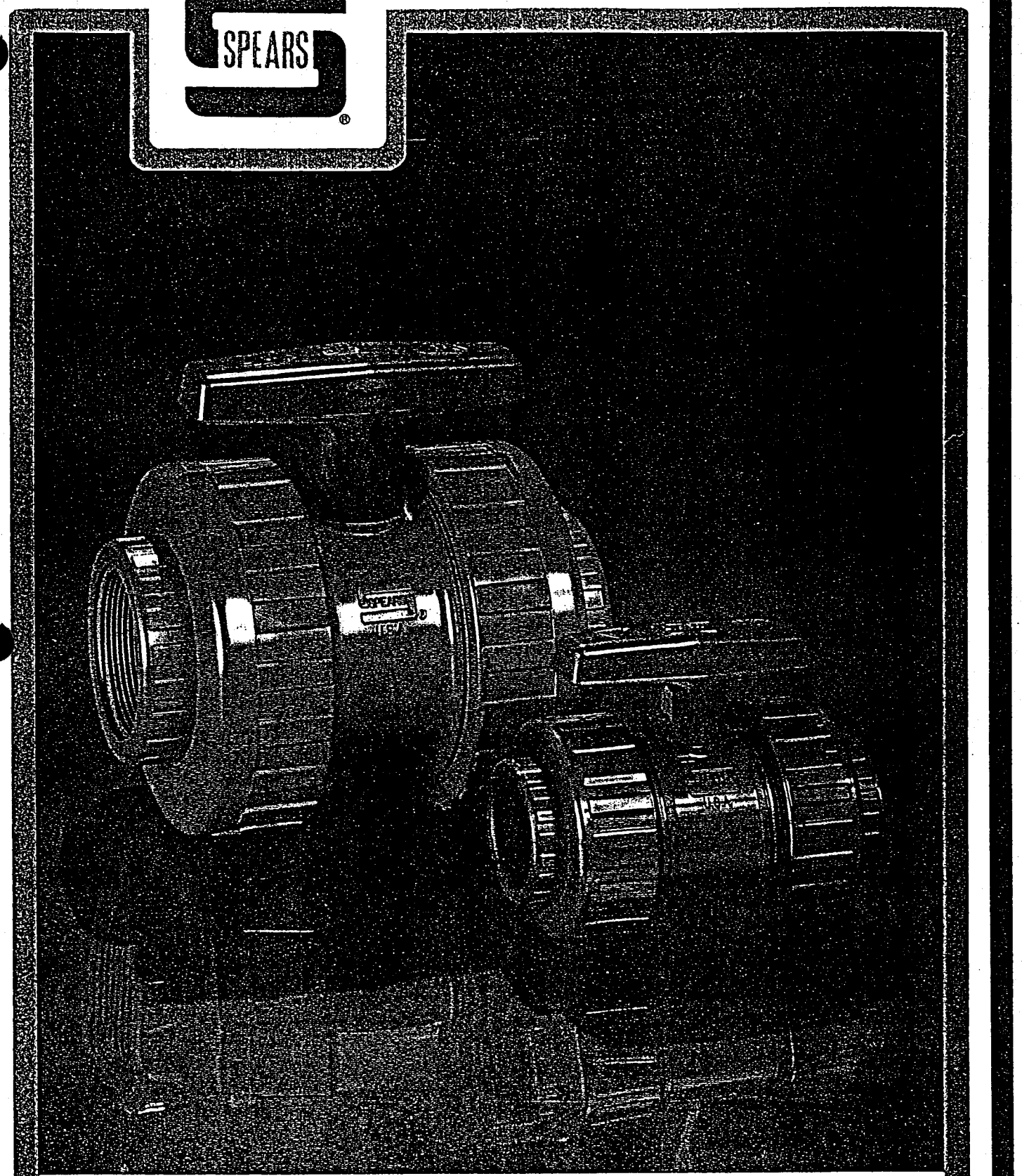
PURSUING CHARLOTTE EXCELLENCE

Nom. Size	Part No.	Truck Load Percent Per Skid	Skid Qty.	Outside Diameter	Min. Wall	Max. Work Pressure At 23° C	Wt. Per 100 Ft.	List Price Per 100 Ft.
1¼"	7100	1.780 3.570	10'—2120' 20'—4240'	1.660	.140	370 PSI	42.0	$ 106.00
1½"	7112	1.780 3.570	10'—1720' 20'—3440'	1.900	.145	330 PSI	50.4	$ 124.00
2"	7200	1.780 3.570	10'—990' 20'—1980'	2.375	.154	280 PSI	67.6	$ 162.00
3"	7300	4.160 3.570	10'—1040' 20'—920'	3.500	.216	260 PSI	141.0	$ 326.00
4"	7400	4.160 7.144	10'—600' 20'—1200'	4.500	.237	220 PSI	200.0	$ 460.00
5"	7500	7.144	20'—760'	5.563	.258	190 PSI	272.5	$ 630.00
6"	7600	4.160 7.144	10'—280' 20'—560'	6.625	.280	180 PSI	352.0	$ 816.00
8"	7800	4.165 8.330	10'—180' 20'—360'	8.625	.322	160 PSI	539.0	$1240.00
10"	7910	7.144	20'—220'	10.750	.365	140 PSI	755.0	$1900.00
12"	7912	8.928	20'—160'	12.750	.406	130 PSI	1001.0	$2778.00
14"	7914	4.160	20'—60'	14.000	.437	130 PSI	1180.1	$3281.00
16"	7916	——	20'—40'	16.000	.500	130 PSI	1543.1	$4290.00

Weights are approximate and are for shipping purposes only.

Charlotte Sch. 40 PVC-DWV Pipe listed in this section meets or exceeds the requirements of ASTM D-2665, ASTM D-1785, and is NSF listed. Pipe is NSF listed for potable water use. PVC pipe is not recommended for use with compressed air or gases.

SPEARS®



Safe-T-Shear® TRUE UNION

MADE IN AMERICA WITH PRIDE

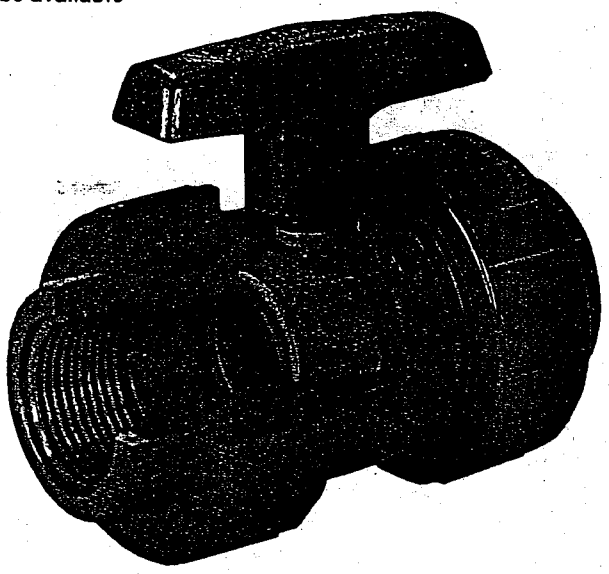
BALL VALVES

SPEARS TRUE UNION BALL VALVE — *the right connection*

Spears True Union Ball valves are precision designed for use in applications where fast-action shut off is required. They are suitable for most fluid handling systems. These high-quality valves come in either **PVC** or **CPVC** material and in sizes ranging from **1/2** inch through **4** inches ASTM IPS. All sizes will be available in **POLYPROPYLENE** materials in the near future.

Spears ball valves feature:

- **Superior chemical and corrision resistance**
- **1/2" through 2" rated at 200 PSI, non-shock, maximum operating pressure at 73° F**
- **2-1/2" through 4" rated at 150 PSI, non-shock, maximum operating pressure at 73° F**
- **Schedule 80 bore for full flow**
- **Leak tight shut-off, each valve individually tested**
- **Quick disconnect for maintenance or modification of piping system**
- **Dry construction - no lubricants or graphite seals used in assembly of the valve**



(NSF) S.E. - National Sanitation Foundation; Specially Engineered

• HANDLE

Valve handles are molded from high-quality, virgin PVC material . . . the same material used in the body and components. (CPVC valves have PVC handles)

• SAFE-T-SHEAR® STEM

This important SAFETY FEATURE prevents dangerous line fluids from leaking out in the event of stem damage. A special shear point controls breakage caused by heavy impact or overtorqueing so it occurs above the stem "O" ring. The stem seal then remains intact until repair or replacement can be made.

• STEM MATERIAL

Ball valve stems are molded from CPVC material that provides high durability and long service life.

• "O" RING SEALS

"O" ring seals are offered in either of two elastomers:

VITON® (Fluorocarbon) resists wide range of chemicals, including salts, mineral acids, and chlorinated hydrocarbons.

EPDM (Terpolymer) stands up to a variety of oxidizing chemicals, bases, alcohols, and acids.

• SEAL CARRIER

A heavy ACME thread design ensures positive engagement of the seal carrier into the valve body. This solid containment allows safe downstream loosening of the union nut, when the valve is in the closed position, thus blocking upstream line pressure.

Adjustment of the seal carrier can easily be made with our unique tool designed to fit 1/2 in. through 4 in. ball valves.

• BALL MATERIAL

The ball itself is made from high quality virgin CPVC material and precision molded to provide long service life.

• BALL SEALS

Ball seals are made from Teflon®, a fluorocarbon material that is almost totally insoluble and chemically inert. Teflon® seals provide both extremely high mechanical strength and lubricity to make valve operation smooth, with minimal wear.

• END CONNECTORS

Spears True Union Ball Valves are furnished with a pair of threaded and a pair of socket end connectors for simplification of distributor and end-user inventories. *WITH SPEARS TRUE UNION BALL VALVES YOU ALWAYS HAVE THE RIGHT CONNECTION.*

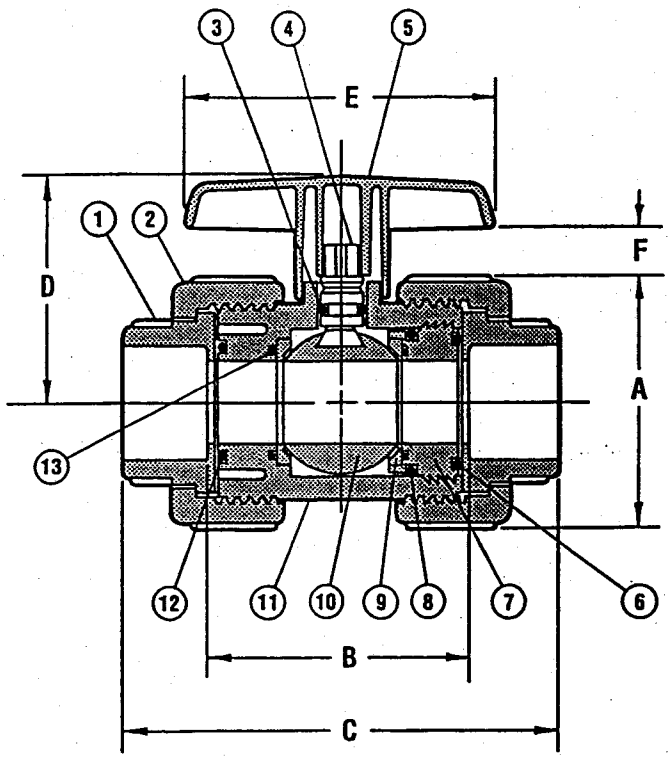
NOTE: 2½", 3" and 4" True Union Ball Valves will NOT be furnished with dual end connectors.

ALL SPEARS PIPING PRODUCTS ARE READILY AVAILABLE FOR PROMPT SHIPMENT FROM AMPLE INVENTORIES MAINTAINED AT SPEARS REGIONAL WAREHOUSES IN KEY LOCATIONS THROUGHOUT THE COUNTRY

PARTS

No.	PART	QTY.	MATERIAL
1	Union End	2	PVC/CPVC
2	Union Nut	2	PVC/CPVC
3	Stem "O" Ring	1	EPDM/Viton®
4	Stem	1	CPVC
5	Handle	1	PVC
6	Seal Carrier "O" Ring	1	EPDM/Viton®
7	Seal Carrier	1	PVC/CPVC
8	Body "O" Ring	1	EPDM/Viton®
9	Seat	2	Teflon®
10	Ball	1	CPVC
11	Body	1	PVC/CPVC
12	Solid End "O" Ring	1	EPDM/Viton®
13	Secondary Carrier "O" Ring	2	EPDM/Viton®

* CHEMICAL RESISTANCE - All materials used in the construction of the valve should be taken into consideration by the end user when determining chemical resistance suitability for a particular application.



DIMENSIONS

SIZE†	A	B*	C	D	E	F	Approx. Weight Ea. (Lbs.) PVC	CPVC
1/2 in.	2-1/64	2-7/32	3-21/32	1-29/64	2-1/2	13/32	.35	.38
3/4 in.	2-7/16	2-45/64	4-17/64	2-7/32	2-3/4	13/32	.59	.64
1 in.	2-49/64	3-1/32	4-31/64	2-9/16	3-1/2	5/8	.88	.95
1-1/4 in.	3-31/32	3-9/16	5-9/16	3-9/32	3-3/4	5/8	1.85	1.97
1-1/2 in.	3-31/32	3-3/4	5-15/16	3-3/32	4	35/64	2.03	2.21
2 in.	5-3/32	4-9/16	6-15/16	4-7/32	5	27/64	3.71	3.99
2-1/2 in.	6-7/8	6-17/32	10-1/32	5-5/16	8-27/32	7/8	8.60	9.20
3 in.	6-7/8	6-7/16	10-11/64	5-5/16	8-27/32	7/8	8.75	9.30
4 in.	8-15/32	7-23/32	12-1/4	6-1/8	8-27/32	7/8	14.70	15.20

† Metric sizing available on special order basis. * Valve laying length

SAMPLE ENGINEERING SPECIFICATION

All thermoplastic True Union Ball Valves, are to be **SPEARS** produced from virgin;

(Select one) — PVC TYPE I GRADE I MATERIAL — CPVC TYPE IV GRADE I MATERIAL

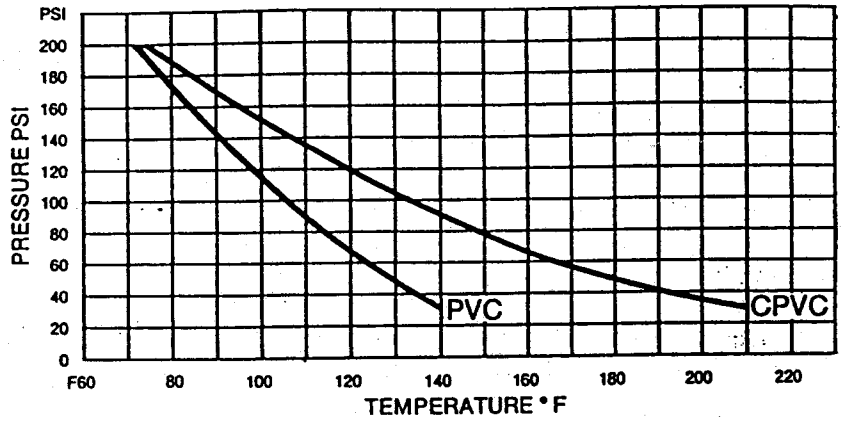
with;

(Select one) — VITON® "O" RINGS — EPDM "O" RINGS

Valves are to contain all of the following design features: SAFE-T-SHEAR® stem, adjustable ACME thread for seal carrier, and CPVC stem and ball regardless of body material selection.

® Viton and Teflon are trademarks of E.I. DuPont.

PRESSURE VS TEMPERATURE



Operating pressures are dependent upon temperature conditions. These curves show the operating pressures of the PVC, CPVC Valves at 73° F, and the reduced operating pressures at higher temperatures.

NOTE: Maximum operating temperatures for threaded PVC Piping Systems should not exceed 110° F. Maximum operating temperatures for threaded CPVC Piping Systems should not exceed 150° F.

PHYSICAL PROPERTIES OF MATERIAL

CHARACTERISTIC	PVC	CPVC
Specific Gravity, ±0.02	1.41	1.53
Hardness - Rockwell "R"	112	119
Tensile Strength PSI	7,100	8,050
Tensile Modulus PSI	435,000	387,000
Flexural Strength PSI	13,580	15,300
Izod Impact Strength ft-lbs / in. notch @ 73° F	1.03	1.60
Heat Deflection Temperature °F at 264 PSI	162	212

Cv VALUES

Cv Values are not given because of the full-flow bore feature of the valves. Pressure drop will be the same as for the equivalent length of Schedule 80 pipe.

NOTE – **SOLVENT WELD CONNECTIONS** — Use a quality grade of primer and solvent cement formulated for the type of connection, with the **CORRECT SIZE APPLICATOR.** Read and follow all of the solvent cement **MANUFACTURER'S APPLICATION INSTRUCTIONS.**

THREADED CONNECTIONS — Use a quality grade of **TEFLON TAPE** recommended by the manufacturer for use with plastic. **DO NOT USE OIL BASE PIPE JOINT COMPOUND** or **TEFLON PASTE** — they may contain substances that could cause **STRESS CRACKING** to plastics.

1 to 1½ turns beyond finger tight is generally all that is required to make a sound plastic threaded connection. Unnecessary **OVERTIGHTENING** will cause **DAMAGE TO BOTH PIPE AND FITTING.**

WATER HAMMER — Spears Manufacturing Company, Inc., recommends that all PVC and CPVC plastic piping systems be designed and constructed to **AVOID EXCESSIVE WATER HAMMER.** Water hammer can cause damage, and failure to pipe, valves, and fittings with the piping system.

Spears Manufacturing Company **DOES NOT RECOMMEND** the use of thermoplastic piping products for systems to transport or store compressed air or gases, or the testing of thermoplastic piping systems with compressed air or gases in above & below ground locations. The use of our product in exposed, compressed air or gas systems automatically voids our warranty for such products and its use against our recommendation is entirely the responsibility and liability of the installer.

Spears Manufacturing Company will not accept responsibility for damage or impairment of its products, or other consequential or incidental damages caused by misapplication, incorrect assembly, and / or exposure to harmful substances or conditions.

MADE IN AMERICA WITH PRIDE

SPEARS® MANUFACTURING CO.
CORPORATE OFFICE AND INTERNATIONAL SALES
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Telex#6972762 Fax#818 367-3014

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FAIRVIEW INDUSTRIAL PARK
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OUTSIDE PENNSYLVANIA
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INSIDE PENNSYLVANIA
1 (800) 821-1057
Fax# 717 938-6547

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Fax #206 939-7557

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CARROLLTON 75007
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INSIDE FLORIDA
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OUTSIDE FLORIDA
1 (800) 327-6390
Fax# 305 425-3563

COLORADO
4800 NOME ST.
DENVER 80239
(303) 371-9430
OUTSIDE COLORADO
1 (800) 525-1119
Fax# 303 375-9546

INDEPENDENT PIPE PRODUCTS

I. P. P.

Better by Design

To : Carl Bennett
Hughes Supply
Sarasota, Florida

From : Harvey Svetlik , P.E.

Re : Ductile Iron Mechanical Joint Anchor Fitting

Dear Mr. Bennett,

Independent Pipe Products is pleased to provide more information on the DIMJA fitting. This fitting design is basically a piece of pipe with a flange in the middle of it. Structurally it is very simple. The forces it endures are axial tension due to thermal contraction, hoop-stress in tension due to internal pressure, beam-bending as in pipeline settlement, compression on the back and front face of the flange ring due to axial gasket load, radial compression between the gasket and stiffener, and axial shear across the flange ring under thermal contraction.

In all cases, the fitting is designed to be stronger than the pipe to which it is attached in all conditions of stress. The pipe will fail before the fitting does. This is the criteria of a fully pressure rated fitting.

For fitting sizes 4" to 12" : The fitting has been quick-burst to exceed four times its working pressure rating. It has been tested to double its working pressure rating for 10,000 hours. It has been fatigue tested to 50% over-pressurization for over 3,000,000 cycles without failure. It has been loaded in tension to the yield strength of the DR11 pipe, such that the flange ring never sheared before the pipe pulled in half or the ductile-iron back-up ring or end cap fractured.

For fitting sizes 14" to 24", the same design criteria was applied on a ratio basis so that the design stress in 24" fittings was the same as the design stress as in 12" fittings. Hence, the design basis proven and validated in the 12" and smaller diameter fittings is the same as for the larger diameters. All these fittings have the same design stress and the same performance capability.

Respectfully,

Harvey Svetlik

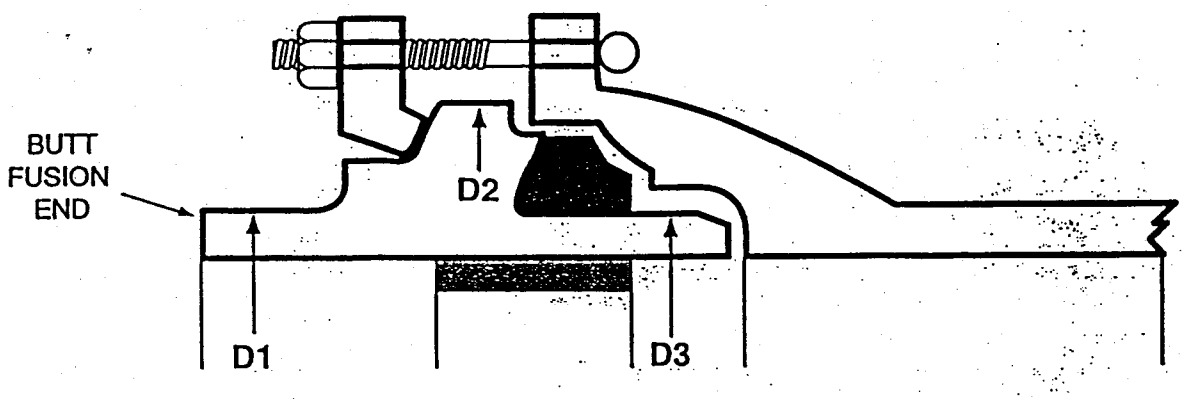
(817) 633-6948 • (800) 499-6927 • FAX (817) 633-8204

"BETTER BY DESIGN"®

DIMJA-KIT (4" - 12" DIPS & IPS)

(Ductile-Iron Mechanical Joint Anchoring Kit)

- Kit design based on DI Hydrant-Tee Anchoring Tee Outlet.
- Kit includes HDPE anchor fitting, metal drive ring, longer tee-bolts, standard rubber gasket, stiffener.
- Stocked in DR11; rebored to DR as ordered.



Nominal Size	D_1 IPS	D_1 DIPS	D_2	D_3	List Price
3	3.5	3.96	5.37	3.96	
4	4.50	4.80	6.63	4.80	
6	6.63	6.90	8.63	6.90	
8	8.63	9.05	10.75	9.05	
10	10.75	11.10	13.2	11.10	
12	12.75	13.20	15.38	13.20	

Order information needed:
Butt-fusion end exact D_1 and DR

Fusion instructions: Grip on surface D_1 or D_3, align, face, and fuse butt-end to pipe main per pipe mfgr. recommended procedures, trim fusion bead as required, install gasket.

Chevron Plexco

AWWA C906 BLUESTRIPE® NSF
Ductile Iron Pipe Sizes and Weights

Nom. Pipe Size	Nom. O.D. (in)	SDR	Min. Wall (in.)	Avg. I.D. (in.)	Weight (lbs./ft.)
4" DI	4.800	9*	0.533	3.669	3.11
		11	0.436	3.875	2.61
		13.5	0.356	4.046	2.17
		15.5	0.310	4.143	1.91
		17	0.282	4.201	1.75
		21	0.229	4.315	1.44
6" DI	6.900	9*	0.767	5.275	6.43
		11	0.627	5.570	5.39
		13.5	0.511	5.816	4.48
		15.5	0.445	5.956	3.94
		17	0.406	6.040	3.62
		21	0.329	6.203	2.97
8" DI	9.050	9*	1.006	6.918	11.06
		11	0.823	7.306	9.27
		13.5	0.670	7.629	7.70
		15.5	0.584	7.812	6.78
		17	0.532	7.921	6.23
		21	0.431	8.136	5.10
10" DI	11.100	9*	1.233	8.485	16.64
		11	1.009	8.961	13.95
		13.5	0.822	9.357	11.59
		15.5	0.716	9.582	10.21
		17	0.653	9.716	9.37
		21	0.529	9.979	7.68
12" DI	13.200	9*	1.467	10.091	23.54
		11	1.200	10.656	19.73
		13.5	0.978	11.127	16.39
		15.5	0.852	11.395	14.43
		17	0.776	11.554	13.24
		21	0.629	11.867	10.86

AWWA Technical Bulletin No. 7

3 Paired Blue Stripes

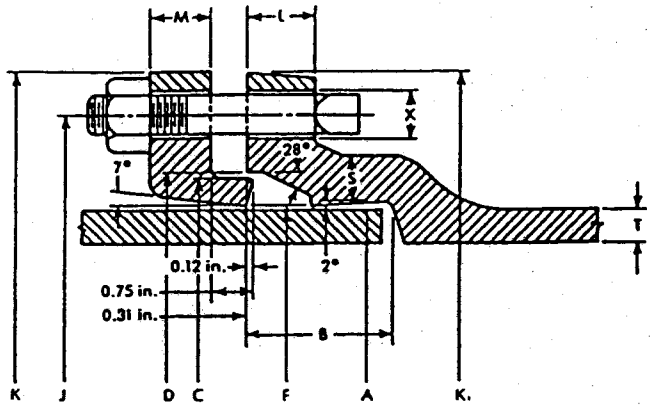
NSF 61 Standard; NSF 14 Available

*Note: Feedstock for SDR 9 fittings may not be available.

MECHANICAL JOINT SSB-DUCTILE IRON CLASS 350 FITTINGS

Tyler Pipe
Subsidiary of
Tyler Corporation

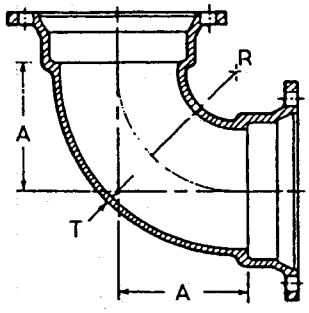
SAMPLE SPECIFICATIONS
3" THRU 24" MECHANICAL JOINT DUCTILE IRON FITTINGS shall be produced in accordance with all applicable terms and provisions of ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11.
NOTE: Fittings are cement-lined and seal-coated in accordance with ANSI/AWWA C104/A21.4; also available double cement-lined or bare. See list price sheet for details.

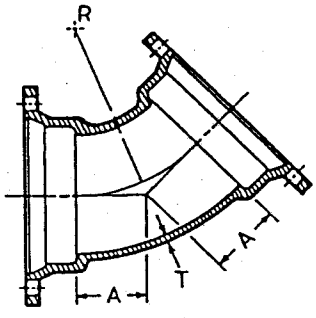


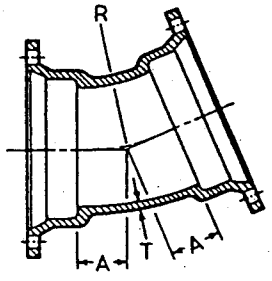
JOINT DIMENSIONS IN INCHES

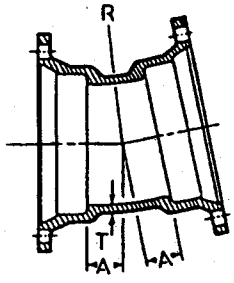
Size	A Dia.	B	C Dia.	D Dia.	F Dia.	J Dia.	K¹ Dia.	K² Dia.	L	M	S	T	X Dia.	Size	No.
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	.58	.62	.39	.33	3/4	5/8x3	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	.60	.75	.39	.34	7/8	3/4x3 1/2	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	.63	.88	.43	.36	7/8	3/4x3 1/2	6
8	9.05	2.50	10.17	10.27	9.15	11.75	12.31	13.37	.66	1.00	.45	.38	7/8	3/4x3 1/2	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	.70	1.00	.47	.40	7/8	3/4x3 1/2	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	.73	1.00	.49	.42	7/8	3/4x3 1/2	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.31	20.25	.79	1.25	.56	.47	7/8	3/4x4	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.56	22.50	.85	1.31	.57	.50	7/8	3/4x4	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	1.38	.68	.54	7/8	3/4x4	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.08	1.02	1.44	.69	.57	7/8	3/4x4	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	1.56	.75	.61	7/8	3/4x4 1/2	16

BENDS







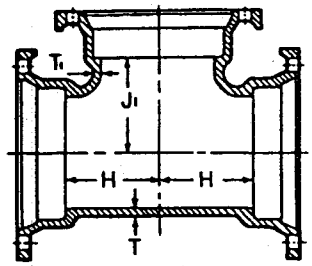


	90° Bends (1/4)				45° Bends (1/8)			22 1/2° Bends (1/16)			11 1/4° (1/32)		
	Dimensions				Dimensions			Dimensions			Dimensions		
Size	T	A	R	Weight	A	R	Weight	A	R	Weight	A	R	Weight
3	.34	4.5	4.0	20	2.00	3.62	16	1.50	4.98	15	1.25	7.62	15
4	.35	5.0	4.5	26	2.49	4.81	22	1.82	6.66	21	1.55	10.70	20
6	.37	6.5	6.0	48	3.50	7.25	38	2.59	10.50	37	1.81	13.26	33
8	.39	7.5	7.0	68	4.00	8.44	59	2.85	11.80	51	2.06	15.80	48
10	.41	9.5	9.0	107	5.01	10.88	81	3.35	14.35	67	2.32	18.36	61
12	.43	10.5	10.0	141	5.98	13.25	111	3.86	16.90	80	2.56	20.90	79
14	.51	12.0	11.5	220	5.50	12.06	164	3.93	17.25	148	2.59	21.25	131
16	.52	13.0	12.5	264	5.98	13.25	202	3.98	17.50	179	2.62	21.50	159
18	.59	15.5	14.0	410	7.50	14.50	289	7.50	30.19	292	7.50	60.94	287
20	.60	17.0	15.5	505	8.00	16.88	348	8.50	35.19	364	8.50	71.07	346
24	.62	20.0	18.5	695	9.00	18.12	475	9.00	37.69	460	9.00	76.12	457

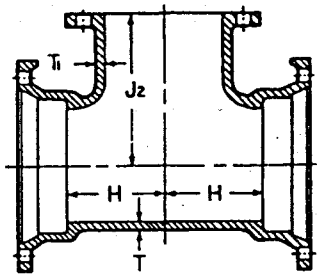
MECHANICAL JOINT SSB-DUCTILE IRON CLASS 350 FITTINGS

TEES

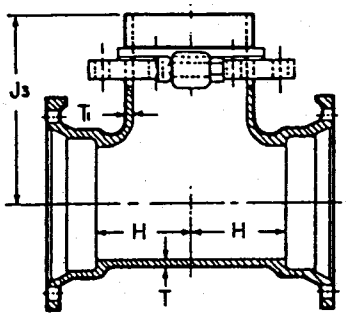
CROSS



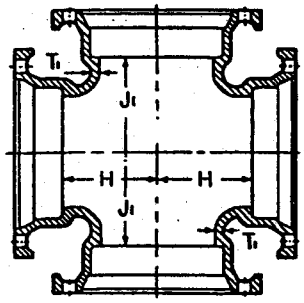
MJ Tee



MJ x FE Tee



MJ x Swivel Tee



Cross

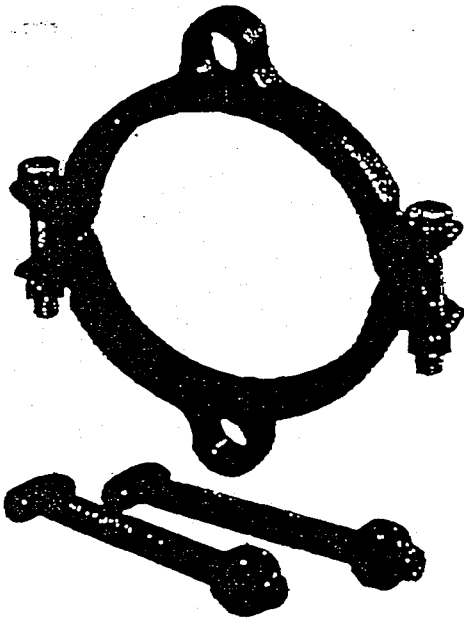
Size	Dimensions T	T1	H	J1	J2	J3	Weights MJ	MJxFE	MJxS†	Cross
3	.34	.34	3.5	3.50	5.5	...	26	28	...	33
4x3	.35	.34	3.5	4.00	6.5	...	32	34	...	38
4	.35	.35	4.0	4.00	6.5	...	35	38	...	42
6x3	.37	.34	3.5	5.00	8.0	...	47	51	...	...
6x4	.37	.35	4.0	5.00	8.0	...	51	54	...	62
6	.37	.37	5.0	5.00	8.0	10.50	60	64	77	80
8x3	.39	.34	4.0	6.50	9.0	...	68	72	...	...
8x4	.39	.35	4.5	6.50	9.0	...	71	72	...	84
8x6	.39	.37	5.5	6.50	9.0	11.50	80	83	89	108
8	.39	.39	6.5	6.50	9.0	11.50	90	94	116	120
10x3	.41	.34	4.0	7.50	11.0	...	83	88	...	...
10x4	.41	.35	4.5	7.50	11.0	...	83	89	...	98
10x6	.41	.37	5.5	7.50	11.0	13.00	93	107	113	118
10x8	.41	.39	6.5	7.50	11.0	13.00	111	115	129	138
10	.41	.41	7.5	7.50	11.0	...	120	130	...	155
12x3	.43	.34	4.0	8.75	12.0	...	100	104	...	...
12x4	.43	.35	4.5	8.75	12.0	...	104	115	...	123
12x6	.43	.37	5.5	8.75	12.0	14.25	115	120	128	140
12x8	.43	.39	6.5	8.75	12.0	14.25	123	146	149	162
12x10	.43	.41	7.5	8.75	12.0	...	153	174	...	187
12	.43	.43	8.75	8.75	12.0	...	178	198	...	212
14x6	.51	.44	6.5	10.50	14.0	16.00	183	205	211	210
14x8	.51	.45	7.5	10.50	14.0	...	206	227	...	231
14x10	.51	.46	8.5	10.50	14.0	...	229	244	...	255
14x12	.51	.47	9.5	10.50	14.0	...	235	276	...	269
14	.51	.51	10.5	10.50	14.0	...	281	302	...	344
16x6	.52	.45	6.5	11.50	15.0	17.00	229	213	248	250
16x8	.52	.46	7.5	11.50	15.0	...	248	260	...	264
16x10	.52	.47	8.5	11.50	15.0	...	265	287	...	286
16x12	.52	.48	9.5	11.50	15.0	...	281	312	...	310
16x14	.52	.51	10.5	11.50	15.0	...	317	348	...	363
16	.52	.52	11.5	11.50	15.0	...	323	374	...	410

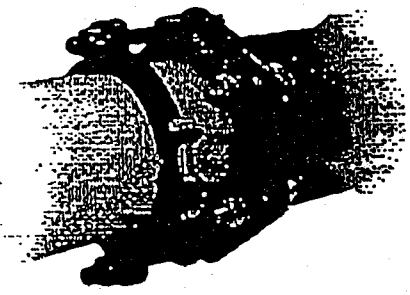
† Weights include swivel gland

Uni-Flange® Block Buster Pipe Restraint

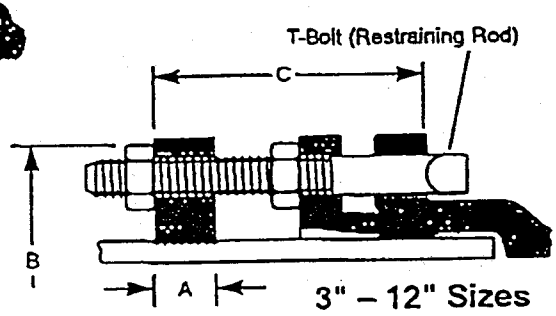
Style 1300 for HDPE Pipe and Mechanical Joint Fittings

Uni-Flange Style 1300 Block Buster Pipe Restraints are recommended for use on 3" through 12" High Density Polyethylene Pipe with outside diameters that correspond to either steel or ductile iron sizes. The 1300 pipe restraint conforms to the pipe O.D. without placing undue stress on the PE pipe. The 1300 may safely be used on PE pipe with SDR's from 9 through 17, **provided a solid insert that extends fully under the restraint is installed in the pipe.** The 1300 will restrain pipe to pressures up to the rated pressure of the pipe, if properly installed.





3" - 12 Series 1300
Restraining MJ Fitting



3" – 12" Sizes

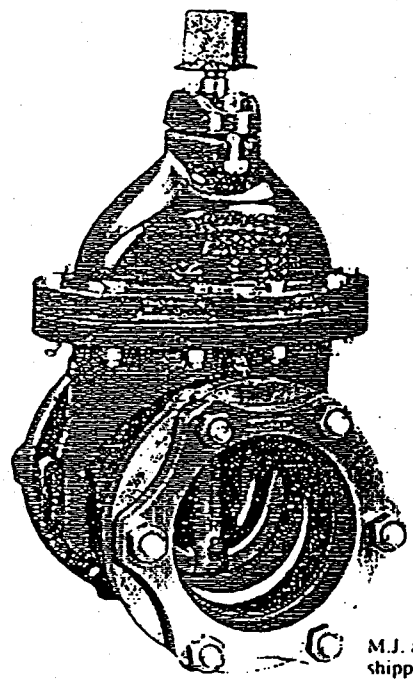
Nom. Pipe Size	PVC Pipe with Steel Pipe O.D. Style 1300-S		PVC Pipe with Ductile Iron Pipe O.D. Style 1300-C		A	B Approx.	C Max.	Restraint Bolts / Rods		Clamping Bolts		Approx. Wt. Lbs.
	O.D.	Catalog Number	O.D.	Catalog Number				No.	Size	No.	Size	
3"	3.500	UFR1300-S-3	N/A	–	1-1/8"	7-11/16"	4.0	2	5/8" x 5"	2	5/8" x 3-1/2"	5.8
4"	4.500	UFR1300-S-4	4.80	UFR1300-C-4	1-1/8"	9-1/8"	6.0	2	3/4" x 7"	2	5/8" x 3-1/2"	8.0
6"	6.625	UFR1300-S-6	6.90	UFR1300-C-6	1-1/8"	11-1/8"	6.0	2	3/4" x 7"	2	5/8" x 3-1/2"	9.0
8"	8.625	UFR1300-S-8	9.05	UFR1300-C-8	1-1/4"	13-7/8"	6.0	2	3/4" x 7"	2	3/4" x 4"	14.7
10"	10.750	UFR1300-S-10	11.10	UFR1300-C-10	1-3/8"	16-5/8"	6.0	4	3/4" x 7"	2	7/8" x 5"	26.3
12"	12.750	UFR1300-S-12	13.20	UFR1300-C-12	1-3/8"	19-1/4"	6.0	4	3/4" x 7"	2	7/8" x 5"	26.5

Caution: The Uni-Flange 1300 series has been tested on PE pipe to insure that it will provide restraint to pressures up to the rated pressure of the pipe. Other Uni-Flange restraint products are not recommended for HDPE pipe. Ford/Uni-Flange has no opinion as to the suitability of its products, or of their effect, on PE pipe over the service life-time of the PE pipe. Please consult the manufacturer of the PE pipe concerning its long term performance.

The Ford Meter Box Co., Inc. 775 Manchester Avenue, P.O. Box 443, Wabash, Indiana, USA 46992-0443
Telephone: 219/563-3171 FAX: 1-800-826-3487 Overseas FAX: 219/563-0167

MUELLER® A-2360 RESILIENT WEDGE GATE VALVES WITH M.J. x M.J. ENDS

- Catalog number---
  A-2360-20 Mechanical joint ends (with mechanical joint unassembled accessories)
  A-2360-23 Mechanical joint ends (less mechanical joint accessories)
- Sizes---2", 3", 4", 6", 8", 10", 12"
- Meets or exceeds all applicable requirements of ANSI/AWWA C509 Standard
- Standard mechanical joint ends comply with ANSI/AWWA C111
- Iron body with nominal 10 mils MUELLER® Pro-Gard™ Fusion Epoxy Coated interior and exterior surfaces
- Epoxy coating meets or exceeds all applicable requirements of ANSI/AWWA C550 Standard and is certified to ANSI/NSF 61
- Iron wedge, symmetrical & fully encapsulated with molded rubber; no exposed iron
- Non-rising stem (NRS)
- Triple O-ring seal stuffing box (2 upper & 1 lower O-rings)
- 2" square wrench nut (optional handwheel available)---open left or open right
- 2"-12" sizes---250 psig (1723 kPa) maximum working pressure, 500 psig (3447 kPa) static test pressure



M.J. accessories shipped unassembled

A-2360-20

Options

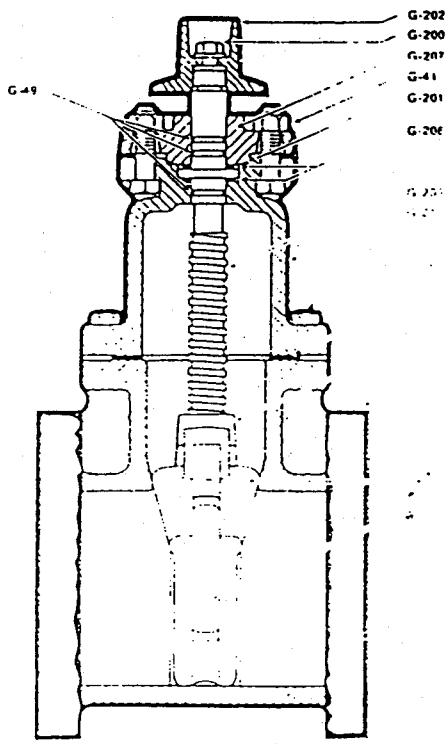
See pages 10.54 and 10.55 for more information on Resilient Wedge Gate Valve options

- Position indicators
- ASTM B98-C66100/H04 stem
- Stainless steel fasteners: Type 304, Type 316
- Handwheel

Resilient wedge gate valve parts

Catalog Part No.	Description	Material	Material standard
G-16	Bonnet Bolts & Nuts	Carbon Steel	ASTM A307 Grade B, Zinc Plated
G-41	Stuffing Box Bolts & Nuts	Carbon Steel	ASTM A307 Grade B, Zinc Plated
G-49	Stem O-rings (3)	Rubber	ASTM D2000
G-200	Wrench Nut Cap Screw	Carbon Steel	ASTM A307 Grade B, Zinc Plated
G-201	Stuffing Box Seal	Rubber	ASTM D2000
G-202	Wrench Nut	Cast Iron	ASTM A126 CL B
G-203	Stem	Bronze	ASTM B138
G-204	Hand Wheel (not shown)	Cast Iron	ASTM A126 CL B
G-205	Stem Nut	Bronze	ASTM B62
G-206	Guide Cap Bearings	Copper	
G-207	Stuffing Box	Cast Iron	ASTM A126 CL B
G-208	Anti-friction Washers (2)	Copper	
G-209	Wedge Rubber Encapsulated	Cast Iron*	ASTM A536 CL 65-45-12
G-210	Bonnet	Cast Iron	ASTM A126 CL B
G-211	Bonnet Gasket	Rubber	ASTM D2000
G-212	Body	Cast Iron	ASTM A126 CL B

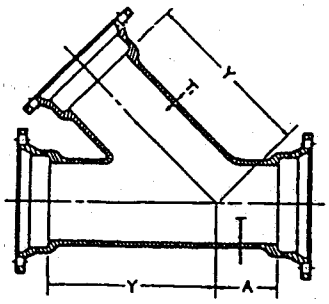
* Encapsulated in molded rubber with no iron exposed



SEE PAGE 10.50 FOR ORDERING INSTRUCTIONS

MECHANICAL JOINT SSB-DUCTILE IRON CLASS 350 FITTINGS

WYES

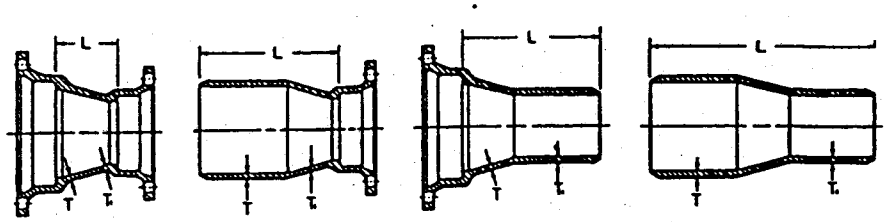


*Wyes

Size	Dimensions A	Y	T	T¹	Weights
3	2.0	8.5	.34	.34	36
4x3	1.0	9.0	.35	.34	40
4	2.5	9.5	.35	.35	45
6x4	1.5	11.0	.37	.35	67
6	3.0	13.0	.37	.37	93
8x4	0.5	13.0	.39	.35	93
8x6	2.0	14.5	.39	.37	113
8	3.5	16.0	.39	.39	136
10x4	0.0	15.0	.41	.35	118
10x6	1.0	16.0	.41	.37	136
10x8	2.5	17.0	.41	.39	170
10	3.5	19.0	.41	.41	199
12x4	0.0	16.5	.43	.35	150
12x6	1.5	18.5	.43	.37	186
12x8	1.5	18.5	.43	.39	188
12x10	3.0	20.0	.43	.41	223
12	4.5	22.5	.43	.43	272
14x6	0.0	19.5	.51	.44	256
14x8	1.5	21.0	.51	.45	286
14x10	3.0	22.5	.51	.46	322
14x12	4.5	24.0	.51	.47	387
14	6.0	25.0	.51	.51	465
16x6	0.0	21.0	.52	.45	300
16x8	0.5	22.5	.52	.46	327
16x10	2.0	24.0	.52	.47	375
16x12	3.5	25.0	.52	.48	465
16x14	5.0	26.5	.52	.51	492
16	6.5	28.0	.52	.52	575

* Not included in AWWA C153.

REDUCERS



MJ x MJ | MJ x SEB | MJ x LEB | PE x PE

Size	Dimensions T	T¹	MJ L	SEB L	LEB L	PE L	Weights MJ	SEB	LEB	PE
4x3	.35	.34	4.0	9.5	9.5	15.0	18	17	18	17
6x3	.37	.34	5.0	10.5	10.5	16.0	26	25	27	20
6x4	.37	.35	4.0	9.5	9.5	15.0	27	26	27	25
8x4	.39	.35	5.0	10.5	10.5	16.0	36	34	36	33
8x6	.39	.37	4.0	9.5	9.5	15.0	40	37	39	36
10x4	.41	.35	7.0	12.5	12.5	18.0	47	46	43	49
10x6	.41	.37	5.0	10.5	10.5	16.0	47	48	52	48
10x8	.41	.39	4.0	9.5	9.5	15.0	54	52	52	47
12x4	.43	.35	9.0	14.5	14.5	20.0	67	61	68	60
12x6	.43	.37	7.0	12.5	12.5	18.0	67	58	66	58
12x8	.43	.39	5.0	10.5	10.5	16.0	64	62	65	60
12x10	.43	.41	4.0	9.5	9.5	15.0	78	62	65	59
14x6	.51	.44	9.0	17.0	14.5	22.5	108	107	112	109
14x8	.51	.45	7.0	15.0	12.5	20.5	104	107	108	101
14x10	.51	.46	5.0	13.0	10.5	18.5	100	102	100	96
14x12	.51	.47	4.0	12.0	9.5	17.5	100	101	100	99
16x6	.52	.45	11.0	19.0	16.5	24.5	132	131	144	128
16x8	.52	.46	9.0	17.0	14.5	22.5	132	128	136	132
16x10	.52	.47	7.0	15.0	12.5	20.5	128	124	128	123
16x12	.52	.48	5.0	13.0	10.5	18.5	125	123	119	113
16x14	.52	.51	4.0	12.0	12.0	20.0	140	139	138	133
18x8	.59	.45	14.0	22.0	19.5	27.5	194	180	195	170
18x10	.59	.47	12.0	20.0	17.5	25.5	196	180	185	175
18x12	.59	.49	10.0	18.0	15.5	23.5	185	170	190	181
18x14	.59	.56	8.0	16.0	16.0	24.0	190	181	200	185
18x16	.59	.57	7.0	15.0	15.0	23.0	196	180	190	188
20x10	.60	.47	14.0	22.0	19.0	27.5	225	210	210	185
20x12	.60	.49	12.0	20.0	17.5	25.5	210	200	210	195
20x14	.60	.56	10.0	18.0	18.0	26.0	208	198	205	195
20x16	.60	.57	8.0	16.0	16.0	24.0	225	215	222	212
20x18	.60	.59	7.0	15.0	15.0	23.0	233	220	225	210
24x12	.62	.49	16.0	24.0	21.5	29.5	310	300	310	290
24x14	.62	.56	14.0	22.0	22.0	30.0	315	325	335	310
24x16	.62	.57	12.0	20.0	20.0	28.0	325	319	310	304
24x18	.62	.59	10.0	18.0	18.0	26.0	312	310	315	300
24x20	.62	.60	8.0	16.0	16.0	24.0	315	305	307	304

HANCOR Hi-Q® Sure-Lok™ 10.8 PIPE SPECIFICATIONS

Scope
This specification describes 12- to 24-inch Hancor Hi-Q Sure-Lok 10.8 pipe for use in gravity flow drainage applications.

Pipe Requirements
Hi-Q Sure-Lok 10.8 shall meet the requirements of AASHTO M294 Type S. The pipe shall have a smooth interior and annular-corrugated exterior. Manning's "n" value for use in design shall not exceed 0.010.

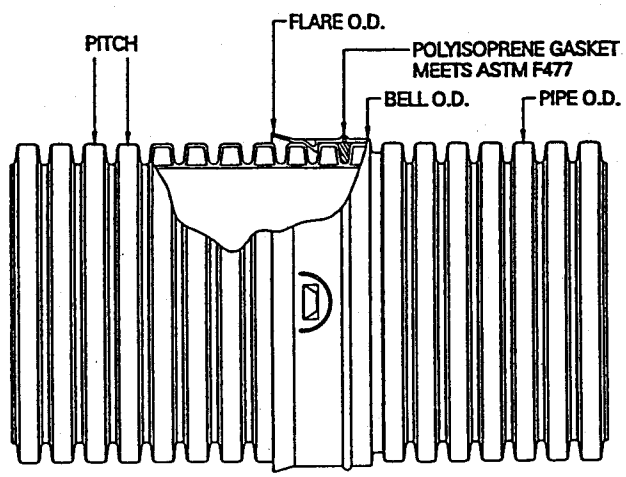
Joint Performance
Pipe shall be joined with the Hi-Q Sure-Lok (bell-and-spigot) joint meeting the requirements of AASHTO M294. The bell shall be an integral part of the pipe and provide a minimum pull-apart strength of 400 lbs.

The joint shall be watertight according to the requirements of ASTM D3212. Gaskets shall be made of polyisoprene meeting the requirements of ASTM F477 with the addition that the gaskets shall not have any visible cracking when tested according to ASTM D1149 after 72 hour exposure in 50 PPHM ozone at 104° Fahrenheit. Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. Joints shall remain watertight when subjected to a 1.5° axial misalignment. A joint lubricant supplied by the manufacturer shall be used on the gasket and bell during assembly.

Fittings
Fittings shall conform to AASHTO M294. Fabricated fittings shall be welded on the interior and exterior at all junctions.

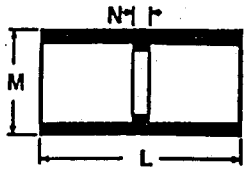
Material Properties
Pipe and fitting material shall be high density polyethylene meeting the requirements of ASTM D3350 Cell Classification 324420C; or ASTM D1248 Type III, Class C, Category 4, Grade P33.

Installation
Installation shall be in accordance with ASTM D2321 with the exception that minimum cover in trafficked areas shall be one foot.



	Nominal Diameter (in.)			
Pipe I.D. (in.)	12	15	18	24
Pipe O.D. (in.)	14.2	17.7	21.5	28.4
Bell O.D. (in.)	14.8	18.4	22.1	29.2
Flare O.D. (in.)	15.4	19.6	23.9	29.9
Pitch (in.)	2.0	2.4	3.0	4.0
Weight (lb./ft.)	3.3	4.7	6.7	12.0
Corrugation	Annular	Annular	Annular	Annular

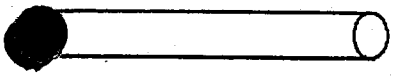
DEEP SOCKET COUPLING
(Slip x Slip)



Part Number	Size	M	N	L	Approx. Wt (Lbs.)
479-005N	1/2	1-1/16	1/8	2-1/2	.04
479-015	1-1/2	2-1/4	1/8	4-5/8	.25
479-020	2	2-3/4	1/8	5-1/16	.35
479-025	2-1/2	3-5/16	1/4	7-1/2	.78
479-030	3	4	1/4	8	1.1
479-040	4	5	1/4	8-3/16	1.5

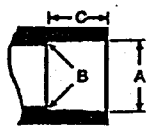
ASTM STANDARD DIMENSIONS

SCHEDULE 40 PIPE DIMENSIONS
ASTM D 1785



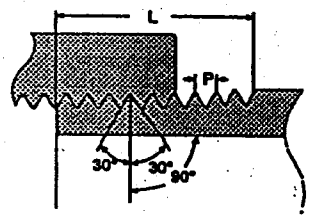
Nominal Pipe Size In.	Mean Outside Diameter In.	O.D. Tolerance In.	Minimum Wall Thickness In.
1/8	0.405	±0.004	0.068
1/4	0.540	±0.004	0.088
3/8	0.675	±0.004	0.091
1/2	0.840	±0.004	0.109
3/4	1.050	±0.004	0.113
1	1.315	±0.005	0.133
1-1/4	1.660	±0.005	0.140
1-1/2	1.900	±0.006	0.145
2	2.375	±0.006	0.154
2-1/2	2.875	±0.007	0.203
3	3.500	±0.008	0.216
4	4.500	±0.009	0.237
5	5.563	±0.010	0.258
6	6.625	±0.011	0.280
8	8.625	±0.015	0.322
10	10.750	±0.015	0.365
12	12.750	±0.015	0.406

SCHEDULE 40 SOCKET DIMENSIONS
ASTM D 2466



Nominal Size In.	Diameter			Socket Length Minimum C
	Entrance A	Bottom B	Tolerance In.	
1/8	0.417	0.401	±0.004	0.500
1/4	0.552	0.536	±0.004	0.500
3/8	0.687	0.671	±0.004	0.594
1/2	0.848	0.836	±0.004	0.688
3/4	1.058	1.046	±0.004	0.719
1	1.325	1.310	±0.005	0.785
1-1/4	1.670	1.655	±0.005	0.938
1-1/2	1.912	1.894	±0.006	1.094
2	2.387	2.369	±0.006	1.156
2-1/2	2.889	2.868	±0.007	1.750
3	3.516	3.492	±0.008	1.875
4	4.518	4.491	±0.009	2.000
5	5.583	5.553	±0.010	3.000
6	6.647	6.614	±0.011	3.000
8	8.655	8.610	±0.015	4.000
10	10.780	10.735	±0.015	5.000
12	12.780	12.735	±0.015	6.000

AMERICAN NATIONAL STANDARD TAPER PIPE THREADS (NPT)
ANSI B1.20.1 ASTM D 2466



Nominal Size In.	Threads Per Inch	Effective Thread Length L	Pitch Of Thread P
1/8	27	0.2639	0.03704
1/4	18	0.4018	0.05556
3/8	18	0.4078	0.05556
1/2	14	0.5337	0.07143
3/4	14	0.5457	0.07143
1	11-1/2	0.6828	0.08696
1-1/4	11-1/2	0.7068	0.08696
1-1/2	11-1/2	0.7235	0.08696
2	11-1/2	0.7565	0.08696
2-1/2	8	1.1375	0.12500
3	8	1.2000	0.12500
4	8	1.3000	0.12500
5	8	1.4063	0.12500
6	8	1.5125	0.12500
8	8	1.7125	0.12500

Working Pressures and Solder

The table of maximum working pressures below must be understood to reflect what is generally considered as good engineering practice under reasonably constant and favorable conditions; i.e., pressures which are fairly steady, absence of particularly corrosive media, etc. Unusual conditions require increased safety factors and therefore lower working pressures should be used.

Rated Internal Working Pressures of Piping System Made of Copper Water Tube and Soldered Fittings

Solder Used in Joints	Service Temp. Deg. F.	POUNDS PER SQUARE INCH Water (a) Copper Water Tube-Nominal Sizes			
		⅛" to 1" Incl.	1¼" to 2" Incl.	2½" to 4" Incl.	5" to 8" Incl.
*50-50 Tin-Lead (b)	100	200	175	150	135
	150	150	125	100	90
	200	100	90	75	70
	250	85	75	50	45
95-5 Tin-Antimony or 95-5 Tin-Lead (c)	100	500	400	300	270
	150	400	350	275	250
	200	300	250	200	180
	250	200	175	150	135
Brazing Alloys (Melting at or above 1000° F.)	Temperature and pressure ratings consistent with the materials and procedures employed.				

*The data given for 50% tin-50% lead applies also for the 40% tin-60% lead alloy.

The values in this table are based on data in the National Bureau of Standards Publications, "Building Materials and Structures Reports BMS 58 and BMS 83."

(a) Including other noncorrosive liquids and gases
(b) ASTM B32, Alloy Grade 50A
(c) ASTM B32, Alloy Grade 5A

NOTE: The table at left is from data published by the Copper and Brass Research Association.

Estimated Quantity of 50-50 Solder Required to Make 100 Joints

Size	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"	5"	6"	8"
Quantity in Pounds	.5	.75	1.0	1.4	1.7	1.9	2.4	3.2	3.9	4.5	5.5	8.	15.	32.

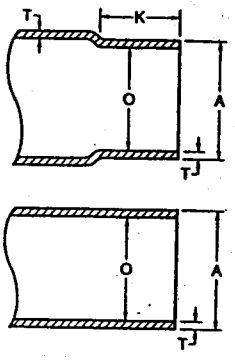
1. The quantity of hard solder used is dependent on the skill of the operator, but for estimating purposes, 75% of the above figures may be used.
2. Two ounces of Solder Flux will be required for each pound of solder.

Wrot Copper and Bronze Solder-Joint Pressure Fittings

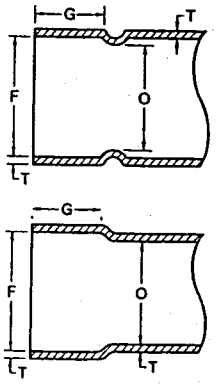
Dimensions of Soldered-Joint Ends (in inches)

Standard Water Tube Size	Male End			Female End			Metal Thickness T	Inside Diameter of Fitting O
	Outside Diameter A		Length K	Inside Diameter F		Depth G		
	Min.	Max.	Min.	Min.	Max.	Min.	Min.	Min.
⅛	0.248	0.251	0.38	0.252	0.256	0.31	0.022	0.18
¼	0.373	0.376	0.38	0.377	0.381	0.31	0.026	0.30
⅜	0.497	0.501	0.44	0.502	0.506	0.38	0.031	0.39
½	0.622	0.626	0.56	0.627	0.631	0.50	0.036	0.52
⅝	0.747	0.751	0.69	0.752	0.756	0.62	0.038	0.63
¾	0.872	0.876	0.81	0.877	0.881	0.75	0.041	0.74
1	1.122	1.127	0.97	1.128	1.132	0.91	0.046	0.98
1¼	1.372	1.377	1.03	1.378	1.382	0.97	0.050	1.23
1½	1.621	1.627	1.16	1.628	1.633	1.09	0.055	1.47
2	2.121	2.127	1.41	2.128	2.133	1.34	0.064	1.94
2½	2.621	2.627	1.53	2.628	2.633	1.47	0.074	2.42
3	3.121	3.127	1.72	3.128	3.133	1.66	0.083	2.89
3½	3.621	3.627	1.97	3.628	3.633	1.91	0.093	3.37
4	4.121	4.127	2.22	4.128	4.133	2.16	0.101	3.84
5	5.121	5.127	2.72	5.128	5.133	2.66	0.115	4.70
6	6.121	6.127	3.22	6.128	6.133	3.09	0.130	5.72
8	8.119	8.127	4.09	8.128	8.133	3.97	0.186	7.55

Male End



Female End

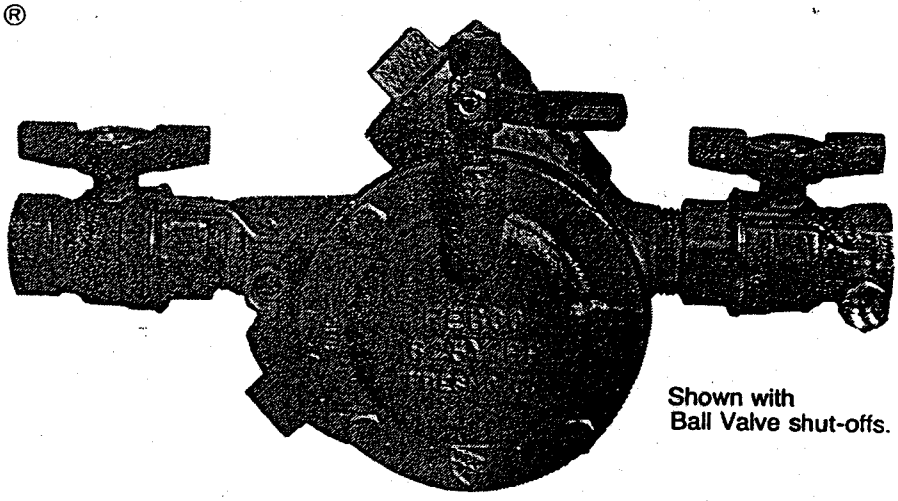


Extracted from American National Standard Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings (ANSI B16.22) with the permission of the publisher. The American Society of Mechanical Engineers, 345 East 47th St., New York, N.Y.

FEBCO®

SPECIFICATION SHEET NO. 825Y (¾" – 2")

Model 825Y (3/4" through 2") Reduced Pressure Backflow Preventer For High Hazard Service



Shown with Ball Valve shut-offs.

Features

- Ultimate mechanical protection of potable water, against hazards of cross connection contamination.
- Meets all specifications of AWWA, ASSE and USC Foundation for Cross Connection Control and Hydraulic Research.
- Documented flow curves established by University of Southern California Foundation for Cross Connection Control and Hydraulic Research.
- Modular relief valve for ease of maintenance.
- Simple Service procedures. All internal parts serviceable in line.
- Low head loss.
- Spring loaded "Y" type check valves.
- Internal relief valve pressure sensing passages.
- Replaceable relief valve seat ring on ¾", 1", 1½" and 2".

Operation

In a flow condition the check valves are open with the pressure between the checks, called the zone, being maintained at least 5.0 PSI lower than the inlet pressure and the relief valve is maintained closed.

Should abnormal conditions arise under no flow or reversal of flow, the differential relief valve will open and discharge to maintain the zone at least 2 PSI lower than the supply.

In resumption of normal flow, the zone's differential pressure will resume and the relief valve will close.

Typical Specifications

The reduced pressure backflow preventer shall consist of two independently operating, spring loaded, "Y" pattern check valves and one hydraulically dependent differential relief valve. The assembly shall automatically reduce the pressure in the "zone" between the check valves to at least 5 PSI lower than inlet pressure. Should the differential between the upstream and the zone of the unit drop to 2 PSI, the differential relief valve shall open and maintain the proper differential.

Mainline valve body and caps including relief valve body and cover shall by bronze. Check valve moving member shall be center stem guided. All hydraulic sensing passages shall by internally located within the mainline and relief valve bodies and relief valve cover. Diaphragm to seat area ratio shall be 10:1 minimum. Relief valve shall have removable seat ring. Check valve and relief valve components shall be constructed so they may be serviced without removing the valve body from the line. All seat discs shall by reversible. Shut-off valves and test cocks shall be full ported ball valves.

The assembly shall be rated to 175 PSI water working pressure and water temperature range from 32°F to 140°F

The assembly shall meet the requirements of ASSE Standard 1013; AWWA Standard Code C506-78; and USC Foundation of Cross Connection Control and Hydraulic Hydraulic Research, Sixth Edition.

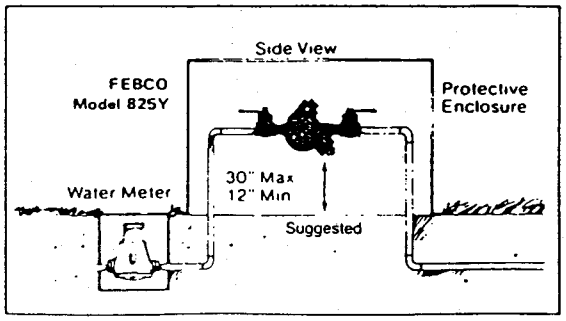
Typical Applications

Reduced Pressure assemblies are used to protect against high hazard (toxic) fluids in water services to industrial plants, hospitals, morgues, mortuaries, and chemical plants. They are also used in irrigation systems, boiler feed, water lines and other installations requiring maximum protection.

Installation

Reduced Pressure Backflow preventers should be installed with minimum clearance of 12" between port and floor or grade. They must be installed where discharge will not be objectionable and can be positively drained away. They should be installed where easily accessible for testing and maintenance and must be protected from freezing. Thermal water expansion and/or water hammer downstream of the backflow preventer can cause excessive pressure. Excessive pressure situations should be eliminated to avoid possible damage to the system and assembly.

Refer to local codes for specific installation requirements. Some codes may prohibit vertical installation.



Wrot Copper Solder-Joint Drainage Fittings

Dimensions of Soldered-Joint Ends (in inches) See Diagram Page 39

Size	Male End			Female End			Metal Thickness T	Inside Diameter of Fitting O
	Outside Diameter A		Length K	Inside Diameter F		Depth G		
	Min.	Max.	Min.	Min.	Max.	Min.	Min.	Min.
1¼	1.372	1.377	0.56	1.378	1.382	0.50	0.040	1.29
1½	1.621	1.627	0.62	1.628	1.633	0.56	0.042	1.53
2	2.121	2.127	0.69	2.128	2.133	0.62	0.042	2.01
3	3.121	3.127	0.81	3.128	3.133	0.75	0.045	2.98
4	4.121	4.127	1.06	4.128	4.133	1.00	0.058	3.93

Extracted from American National Standard Wrought Copper and Bronze Solder-Joint Drainage Fittings (ANSI B16.29) with permission of the publisher. The American Society of Mechanical Engineers, 345 East 47th St., New York, N.Y.

Wrot Copper Fittings Large Diameter Welded Design – 5", 6" & 8"

Fitting Material:
Copper Alloy #122, Phosphorus Deoxidized-High Residual Phosphorus (DHP).
Composition: 99%Copper; .015–.040% Phosphorus.

Weld Material:
Silicon Bronze. Meets specification
rican Welding Society (AWS) A5.7-69
American Metals Society (AMS) 4616 B.

Weld Specifications:
Tensil Strength–Up to 58,000 PSI
Yield Strength–Up to 25,000 PSI
Elongation in 2"–53% to 55%
Hardness-80 to 100 Brinell (500kg. Load)
Temperature: Melt 1832° F, Flow 1931° F.

Method of Joining:
Electric Weld.

Dimensions & Specifications:
EPC Welded fittings are produced in accordance with specifications shown in American National Standard (ANSI) B16.22 for wrought copper, and copper alloy solder-joint pressure fittings.

Testing:
Each fitting is individually tested with air under water. The burst pressure of EPC welded fittings exceeds the recommended working pressure of comparable diameter, annealed, straight, seamless ASTM B88-88 type "L" copper water tube by a safety factor of 4:1 or more.

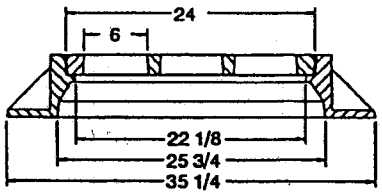
Copper Water Tube-Standard Dimensions and Weights

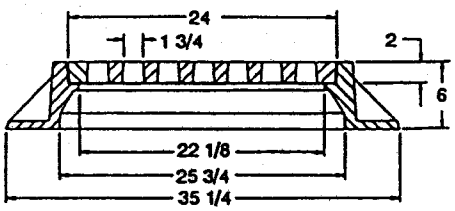
Nominal Tube Size Inches	Outside Dia., In.	Inside Diameter, Inches				Wall Thickness, Inches				†Pounds per Linear Foot			
	Types K-L-M-DWV	Type K	Type L	Type M	Type DWV	Type K	Type L	Type M	Type DWV	Type K	Type L	Type M	Type DWV
¼	.375	.305	.315	-	-	.035	.030	.025	-	.145	.126	.106	-
⅜	.500	.402	.430	-	-	.049	.035	.025	-	.269	.198	.145	-
½	.625	.527	.545	-	-	.049	.040	.028	-	.344	.285	.204	-
⅝	.750	.652	.666	-	-	.049	.042	.030	-	.418	.362	.263	-
¾	.875	.745	.785	-	-	.065	.045	.032	-	.641	.455	.328	-
1	1.125	.995	1.025	-	-	.065	.050	.035	-	.839	.655	.465	-
1¼	1.375	1.245	1.265	1.291	1.295	.065	.055	.042	.040	1.04	.884	.682	.650
1½	1.625	1.481	1.505	1.527	1.541	.072	.060	.049	.042	1.36	1.14	.940	.809
2	2.125	1.959	1.985	2.009	2.041	.083	.070	.058	.042	2.06	1.75	1.46	1.07
2½	2.625	2.435	2.465	2.495	-	.095	.080	.065	-	2.93	2.48	2.03	-
3	3.125	2.907	2.945	2.981	3.035	.109	.090	.072	.045	4.00	3.33	2.68	1.69
½	3.625	3.385	3.425	3.459	-	.120	.100	.083	-	5.12	4.29	3.58	-
	4.125	3.857	3.905	3.935	4.009	.134	.110	.095	.058	6.51	5.38	4.66	2.87
5	5.125	4.805	4.875	4.907	4.981	.160	.125	.109	.072	9.67	7.61	6.66	4.43
6	6.125	5.741	5.845	5.881	5.959	.192	.140	.122	.083	13.9	10.2	8.92	6.10
8	8.125	7.583	7.725	7.785	-	.271	.200	.170	-	25.9	19.3	16.5	-

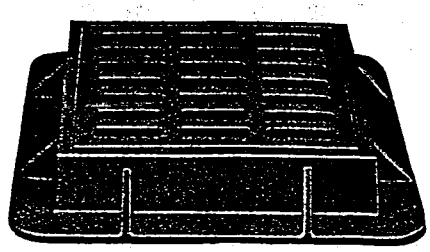
†Slight variations from these weights must be expected in practice.

USF 4140 FRAME AND 6160 GRATE

estricted grate opening.

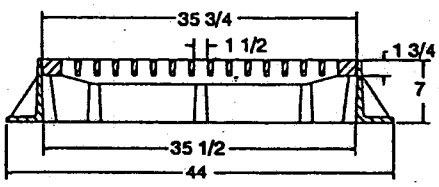


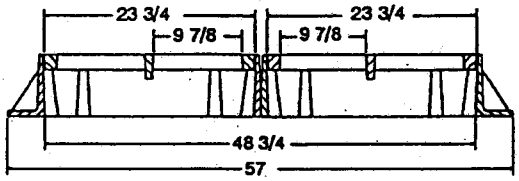


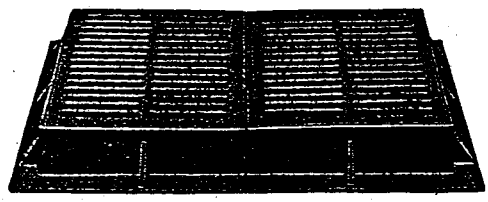


GRATE NUMBER	LOAD RATING	FLOW AREA	GRATE WEIGHT	TOTAL WEIGHT
6160	MEDIUM DUTY	220	150	465

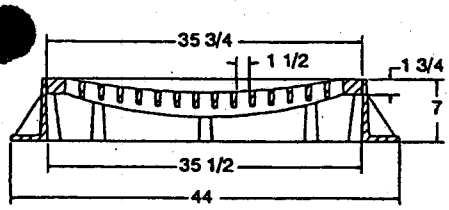
USF 4141 FRAME AND GRATE SERIES

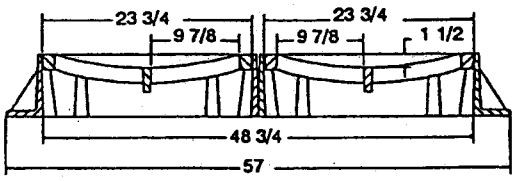


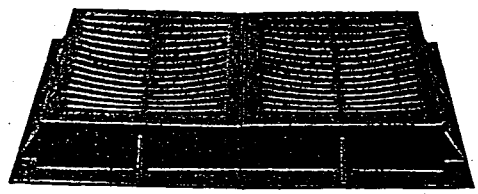




USF 4141-6236







CONCAVE GRATES

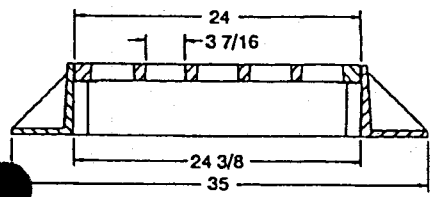
USF 4141-6211

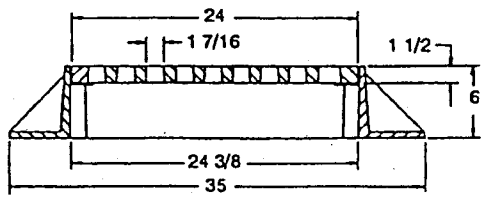
GRATE NUMBER	LOAD RATING	FLOW AREA	GRATE WEIGHT	TOTAL WEIGHT
6236	HEAVY DUTY	890	340	770
6211	HEAVY DUTY	890	340	770

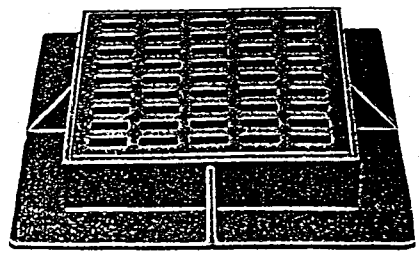
TO ORDER 1 PC. OF USF 6236 SPECIFY USF 6237
TO ORDER 1 PC. OF USF 6211 SPECIFY USF 6238
TO ORDER 1 PC. OF USF 4141 SPECIFY USF 4136

USF 4150 FRAME AND 6155 GRATE

Restricted grate opening.



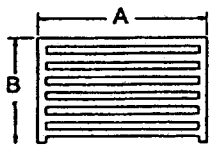




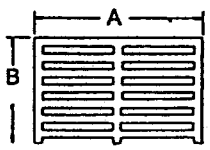
GRATE NUMBER	LOAD RATING	FLOW AREA	GRATE WEIGHT	TOTAL WEIGHT
6155	LIGHT DUTY	220	120	350

USF GRATES 6015 THROUGH 6190

GRATE STYLES



51



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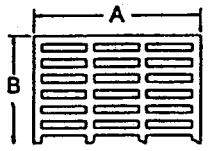

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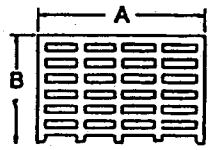

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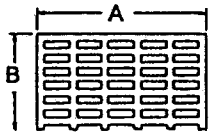

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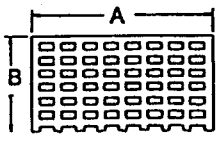

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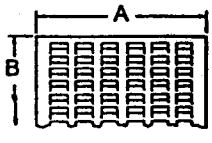
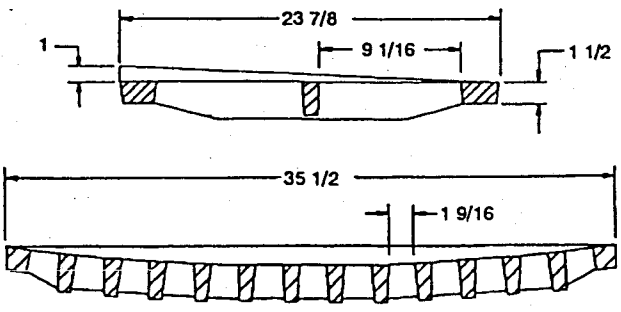


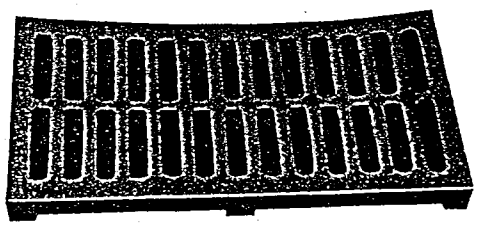
57

GRATE NO.	GRATE STYLE	WIDTH "A"	LENGTH "B"	SEAT HEIGHT	SLOT SIZE	FLOW AREA	WEIGHT	LOAD RATING** 2-Sided SHORT SPAN	2-Sided LONG SPAN	4-Sided BEARING	GRATE NO.	GRATE STYLE	WIDTH "A"	LENGTH "B"	SEAT HEIGHT	SLOT SIZE	FLOW AREA	WEIGHT	LOAD RATING** 2-Sided SHORT SPAN	2-Sided LONG SPAN	4-Sided BEARING
6015	51	21¼	33¾	2¾	1¼x19	260	245	H	-	H	6142	52	20	14½	¾	¾ x 7⅞	120	30	-	L	L
6016	57	17¾	35¾	2	1⅜xVAR	230	155	L	L	H	6145	52-R	6	24	1½	1⅜ x 5	130	80	H	-	H
6100	51-R	8	24	1½	1¼x5½	70	40	H	-	H	*6147	52-R	16⅞	21¾	1¾	1⅝x 6⅞	135	95	H	-	H
6105	52-R	10	24	2 ⅜	1x3½	75	70	H	-	H	*6148	52	22	22	1¾	1¼ x 8⅞	175	120	H	-	H
6106	51	12	24	1¾	1⅜x9	105	75	H	-	H	6150	55-R	39	18	2	1¼ x 6⅞	270	205	L	L	H
6110	51	11¾	11¾	¾	⅞x10	45	15	L	-	L	6151	51	21	28¾	2½	1 x 17	220	200	H	-	H
6115	56-R	11¾	48½	1¾	1¼x4½	160	160	H	-	H	6152	51	21¾	33¾	2¾	1½ x 19	370	230	H	-	H
6118	52-R	12	24	1½	1 x 4½	100	60	H	-	H	6153	54-R	24	14	2⅜	1⅛ x4 ⅝	220	110	H	H	H
6120	52-R	12	24	2 ⅜	1 x 4 ½	100	80	H	-	H	6155	55-R	24	24	1½	1⅞ x 3 ⅞	220	120	L	-	M
6125	53-R	13	13	½	1 x 3	55	15	L	-	L	6160	53-R	24	24	2	1¾ x 6	220	150	L	-	M
6127	52-R	14	18	1½	1⅛x 5¼	90	55	M	-	H	6165	55-R	26	32⅛	4	3¼ x 3⅝	430	345	H	H	H
6130	52-R	14	25 ⅛	2	1 ⅜ x5⅝	140	90	H	-	H	6170	53	35	24	1¾	2 x 8½	355	220	L	L	M
6131	52	16½	26 ⅛	2	1¼ x 6⅜	175	115	H	-	H	6172	53	36	24	1¾	1⅜ x 10½	460	155	L	L	H
6133	52	20⅜	23¾	1¼	1⅜ x 8 ⅞	215	80	L	L	L	6175	56-R	36½	36½	4½	3¼ x 3¼	675	650	H	H	H
6135	51	14	36	2	1 x 11¼	200	120	L	-	L	6178	51	37⅞	17¾	3½	1¾ x 35½	370	240	-	H	H
6137	51	26¼	23	1½	2¼ x 21¾	290	105	-	L	L	6179	54-R	26	26	1	½ x 5¼	220	110	L	-	L
6138	51	13¾	27 ⅛	2	2 x 10	160	90	H	-	H	6180	55-R	39	24	2⅜	1¼ x 6	270	400	H	H	H
6140	52-R	14	24	2 ⅜	1 x 5½	120	90	H	-	H	6185	52-R	43	24	1¾	1 x 4½	100	85	H	-	-
6141	52-R	14	24	2	1 x 5½	120	90	H	-	H	6190	52	24	36	1½	1⅜ x 9½	285	270	H	-	H

* CONCAVE GRATE

USF 6191 CURB INLET GRATE





CITY OF JACKSONVILLE, FLORIDA STANDARD

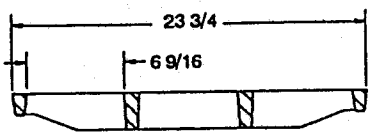
LOAD RATING*			FLOW AREA	TOTAL WEIGHT
2-SIDED LONG SPAN	2-SIDED LONG SPAN	3-SIDED BEARING		
–	–	L	365	200

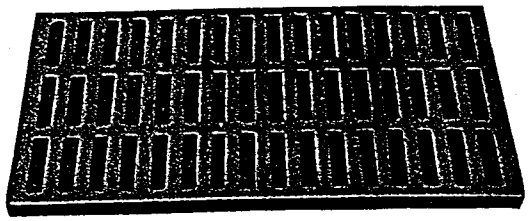
NOTE: See Page 126 for Load Rating Configuration.

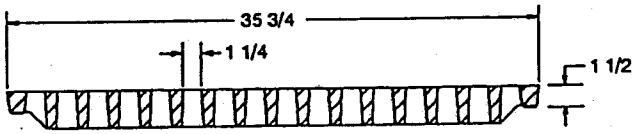
** Load Rating: L=Light; M=Medium Duty; H=Heavy Duty; (-) = Not used in this configuration.

USF 6429 CATCH BASIN GRATE

Specify steel frame, if required.





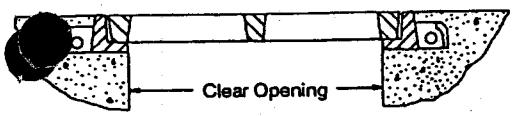


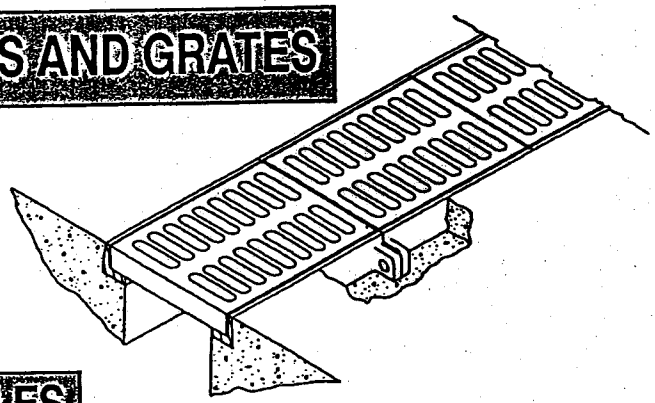
LOAD RATING*			FLOW AREA	TOTAL WEIGHT
2-SIDED SHORT SPAN	2-SIDED LONG SPAN	4-SIDED BEARING		
H	L	H	395	210

FOR FRAME AND GRATE COMBINATION, REFER TO USF 4139

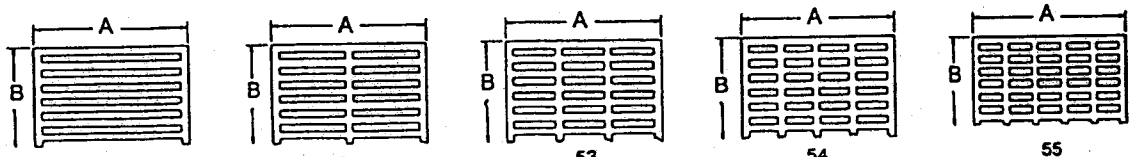
USF RECTANGULAR TRENCH FRAMES AND GRATES

1. Specify bolting, if required.
2. Specify overall length of trench.





GRATE STYLES



LISTED IN ORDER OF SHORTEST BEARING BAR DIMENSION "A". LENGTH "B", AND SEAT HEIGHT.

FRAME-GRATE NUMBER	GRATE TYPE	WIDTH A	LENGTH B	SEAT HEIGHT	CLEAR OPENING	SLOT SIZE	FLOW AREA	LOAD RATING	GRATE WEIGHT
6515-6100	51-R	8	24	1½	6	1¼ x 5½	70	HEAVY DUTY	40
6500-6105	52-R	10	24	2 3/16	8	1 x 3½	75	HEAVY DUTY	70
6515-6118	52-R	12	24	1½	10	1 x 4½	100	HEAVY DUTY	60
6500-6120	52-R	12	24	2 3/16	10	1 x 4½	100	HEAVY DUTY	80
6510-6185	52-R	13	24	1¾	11	1 x 4½	100	HEAVY DUTY	85
6505-6141	52-R	14	24	2	12	1 x 5½	120	HEAVY DUTY	90
6500-6140	52-R	14	24	2 3/16	12	1 x 5½	120	HEAVY DUTY	90
6515-6145	52-R	16	24	1½	14	1⅜ x 5	130	HEAVY DUTY	80
6515-6226	52	19	24	1½	17	1⅜ x 7 5/16	180	HEAVY DUTY	120
6545-6227	52	20	24	2¼	18	1 5/16 x 7 ¾	160	HEAVY DUTY	165
6515-6235	54-R	24	24	1½	22	1¼ x 4½	225	HEAVY DUTY	155
6530-6195	53-R	26	36	1½	24	1 5/16 x 6 5/16	340	HEAVY DUTY	300
6500-6250	52	27	24	2¼	25	1 5/16 x 10¾	220	HEAVY DUTY	200
6535-6212	53	27⅞	35⅞	2	24½	1⅜ x 7 5/16	455	HEAVY DUTY	265
6525-6180	55-R	39	24	2⅛	37	1¼ x 6	270	HEAVY DUTY	400

R=Restricted Grate Openings.
NOTE: For overall frame length, add 1/8 clearance between grates.

SPECIFICATIONS

CAST IRON CONSTRUCTION CASTINGS

MATERIAL: Casting material shall conform to specification ASTM–A48 Class 30, Gray Cast Iron, unless otherwise specified.

APPEARANCE: Castings shall be free from blowholes, shrinkages or other imperfections not true to pattern.

MANUFACTURING: Castings shall be manufactured with critical dimensions conforming to those specified on respective data sheets and drawings. Critical dimensions are defined as those which affect the load bearing capacity, interchangeability and drainage opening where applicable. Noncritical dimensions may change slightly to facilitate proper molding and casting technique. We reserve the right to make modifications to these products as required without notification.

TOLERANCES: Casting tolerances, unless otherwise specified, shall be plus or minus 1/16 inch, and an additional plus or minus 1/16 inch per foot of dimension. Notwithstanding these tolerances, all frames, covers and grates of the same nominal size shall be interchangeable.

MACHINING: Bearing surfaces of circular heavy and medium duty manhole rings, covers and grates are machined to insure proper fit and prevent rattling.

WEIGHTS: Casting weights are approximate and shall be within plus or minus 5% of catalog published weight.

PAINT: Casting are supplied unpainted. For special paint applications, contact our customer service department.

LOAD DESIGNATIONS

CLASSIFICATION	LOAD APPLICATIONS	PROOF LOAD TEST
HEAVY DUTY	Highway traffic loads or 16,000 lb. wheel loads	25,000 lbs. * (Ref: Fed. Spec. RR-F-621 E)
MEDIUM DUTY	Driveways, parking lots, ramps and other similar applications where wheel loads do not exceed 12,000 lbs.	18,000 lbs. *
LIGHT DUTY	Areas such as sidewalks, terraces and other areas which do not receive vehicular traffic.	

* Proof load is applied over 9" x 9" area in center of the casting and held for one minute without failure or permanent deflection.
For special load requirements consult our office or representative.

Appendix H

Pump Operation

And

Maintenance Manual

BARNEY'S PUMPS INC.

FT. LAUDERDALE • JACKSONVILLE • LAKELAND

BPI FILE NUMBER:
T-05713-98

CORPORATE OFFICES
3907 Highway 98 South
POST OFFICE BOX 3529
LAKELAND, FLORIDA
Zip Code 33802-3529
(941) 665-8500
Fax (941) 666-3858

OPERATION AND MAINTENANCE MANUAL

PROJECT: Sarasota County Landfill
C & D Recycling Facility
Sarasota County, Florida

CONTRACTOR: Meyer & Gabbert Excavating Contractors, Inc.
Sarasota, Florida

SUPPLIER: Barney's Pumps, Inc.
Lakeland, Florida

LEACHATE PUMP NO. 1 AND SPRINKLER TRANSFER PUMP NO. 2

(2) MODEL DHH3-169 STA-RITE SELF-PRIMING CENTRIFUGAL PUMPS WITH 2" SUCTION, 1 ½" DISCHARGE, 3 HP, 230 VOLT, 3-PHASE MOTORS FOR DESIGN CONDITIONS OF: 80 GPM @ 69.5 TDH .
PUMP SERIAL NUMBERS: 1H98S, 1H98S

SPRINKLER PUMP NO. 3

(1) MODEL DHJ3-170 STA-RITE SELF-PRIMING CENTRIFUGAL PUMP WITH 2 ½" SUCTION, 2" DISCHARGE, 5 HP, 230 VOLT, 3-PHASE MOTOR FOR DESIGN CONDITIONS OF: 50 GPM @ 50 PSI (115.5' TDH).
PUMP SERIAL NUMBER: G98M

(7) MODEL S50N0 ROTOFLOAT LEVEL CONTROLS, 50' EACH.

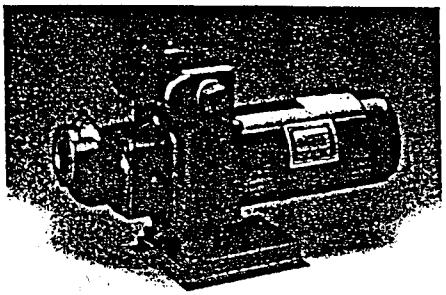
(2) MODEL A845 STAINLESS STEEL CABLE HOLDER.

CONTROL PANEL

(1) TRIPLEX CONTROL PANEL .

Self-Priming Centrifugal Pumps

D
Design Series



This pump (1 thru 2-1/2 HP) is Listed to UL Standards for Safety by Underwriters Laboratories Inc. (UL).

Some of the fastest priming pumps on the market. Available in high head or medium head series. Feature leak-proof mechanical seals, easy service design, heavy-duty motors, rugged construction. Available in 1-5 HP. Special impeller and air volume control tapping.

Order suction flange with flapper check separately.

Materials

Body and Base – close-grained cast iron

Impeller – Noryl® on 1 through 2-1/2 HP, bronze on 3 and 5 HP

Diffuser – cast iron

Shaft – carbon steel inside removable shaft sleeve of stainless steel

Ordering Information

HIGH HEAD

HP	Catalog No.	Pipe Tapping Sizes Suct.	Pipe Tapping Sizes Disch.	Motor Voltage	Phase	Max. Load Amps	Approx. Wt. Lbs.
1	DHE	1-1/2"	1-1/2"	115/230	1	14.8/7.4	65
1	DHE3	1-1/2"	1-1/2"	230/460	3	3.6/1.8	65
1-1/2	DHF	1-1/2"	1-1/2"	115/230	1	19.2/9.6	72
1-1/2	DHF3	1-1/2"	1-1/2"	230/460	3	4.7/2.35	72
2	DHG	2"	2"	230	1	12.0	113
2	DHG3	2"	2"	230/460	3	6.8/3.4	113
2-1/2	DHHG	2"	2"	230	1	12.0	120
2-1/2	DHHG3	2"	2"	230/460	3	8.5/4.25	120
3	DHH	2"	1-1/2"	230	1	13.4	144
3	DHH3	2"	1-1/2"	230/460	3	8.6/4.3	144
5	DHJ	2-1/2"	2"	230	1	22	184
5	DHJ3	2-1/2"	2"	230/460	3	13.2/6.6	184

D SERIES – Order Suction Flange Separately

MEDIUM HEAD

HP	Catalog No.	Pipe Tapping Sizes Suct.	Pipe Tapping Sizes Disch.	Motor Voltage	Phase	Max. Load Amps	Approx. Wt. Lbs.
2	DMG	1-1/2"	1-1/2"	230	1	12.0	86
2	DMG3	1-1/2"	1-1/2"	230/460	3	6.8/3.4	86
2-1/2	DMMG	2"	2"	230	1	12.0	93
2-1/2	DMMG3	2"	2"	230/460	3	8.5/4.25	93
3	DMH	2-1/2"	2"	230	1	13.4	137
3	DMH3	2-1/2"	2"	230/460	3	8.6/4.3	137
5	DMJ	3"	2-1/2"	230	1	22	184
5	DMJ3	3"	2-1/2"	230/460	3	13.2/6.6	184

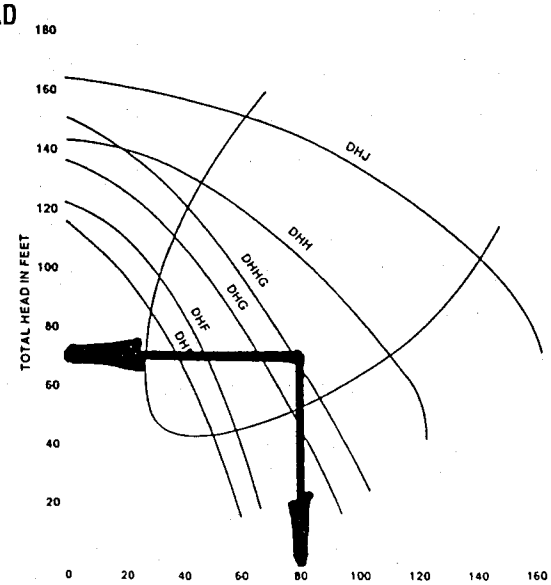
D SERIES – Order Suction Flange Separately

D SERIES FLANGES

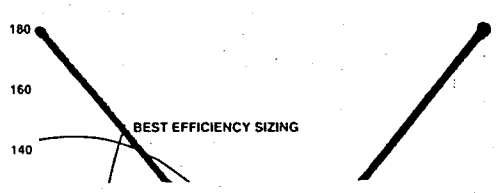
Package 52 – 1-1/2"	Package 53 – 2"	Package 72 – 2-1/2"	Package 73 – 3"

Pump Performance

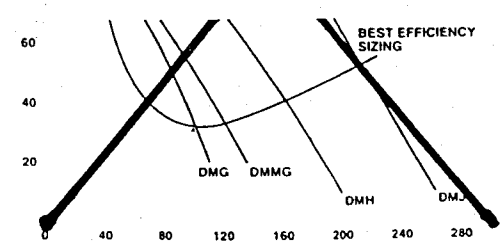
HIGH HEAD



MEDIUM HEAD



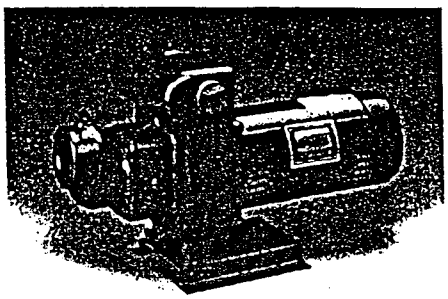
LEACHATE PUMP
MODEL: DHH3, 3 HP, 230 VOLT, 3-PHASE
COS: 80 GPM @ 69.5' TDH



STA-RITE

Self-Priming Centrifugal Pumps

D
Design Series



This pump (1 thru 2-1/2 HP) is Listed to UL Standards for Safety by Underwriters Laboratories Inc. (UL).

Some of the fastest priming pumps on the market. Available in high head or medium head series. Feature leak-proof mechanical seals, easy service design, heavy-duty motors, rugged construction. Available in 1-5 HP. Special impeller and air volume control tapping.

Order suction flange with flapper check separately.

Materials

Body and Base – close-grained cast iron

Impeller – Noryl® on 1 through 2-1/2 HP, bronze on 3 and 5 HP

Diffuser – cast iron

Shaft – carbon steel inside removable shaft sleeve of stainless steel

Ordering Information

HIGH HEAD

HP	Catalog No.	Pipe Tapping Sizes Suct.	Pipe Tapping Sizes Disch.	Motor Voltage	Phase	Max. Load Amps	Approx. Wt. Lbs.
.5	DHE5	1-1/2"	1-1/2"	115/230	1	14.8/7.4	65
1	DHE3	1-1/2"	1-1/2"	230/460	3	3.6/1.8	65
1-1/2	DHF2	1-1/2"	1-1/2"	115/230	1	19.2/9.6	72
1-1/2	DHF3	1-1/2"	1-1/2"	230/460	3	4.7/2.35	72
2	DHG2	2"	2"	230	1	12.0	113
2	DHG3	2"	2"	230/460	3	6.8/3.4	113
2-1/2	DHHG2	2"	2"	230	1	12.0	120
2-1/2	DHHG3	2"	2"	230/460	3	8.5/4.25	120
3	DHH2	2"	1-1/2"	230	1	13.4	144
3	DHH3	2"	1-1/2"	230/460	3	8.6/4.3	144
5	DHJ2	2-1/2"	2"	230	1	22	184
5	DHJ3	2-1/2"	2"	230/460	3	13.2/6.6	184

D SERIES – Order Suction Flange Separately

MEDIUM HEAD

HP	Catalog No.	Pipe Tapping Sizes Suct.	Pipe Tapping Sizes Disch.	Motor Voltage	Phase	Max. Load Amps	Approx. Wt. Lbs.
2	DMG2	1-1/2"	1-1/2"	230	1	12.0	86
2	DMG3	1-1/2"	1-1/2"	230/460	3	6.8/3.4	86
2-1/2	DMMG2	2"	2"	230	1	12.0	93
2-1/2	DMMG3	2"	2"	230/460	3	8.5/4.25	93
3	DMH2	2-1/2"	2"	230	1	13.4	137
3	DMH3	2-1/2"	2"	230/460	3	8.6/4.3	137
5	DMJ2	3"	2-1/2"	230	1	22	184
5	DMJ3	3"	2-1/2"	230/460	3	13.2/6.6	184

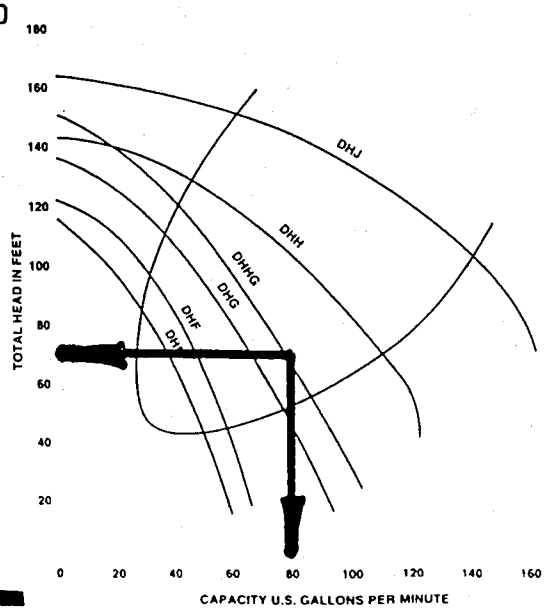
D SERIES – Order Suction Flange Separately

D SERIES FLANGES

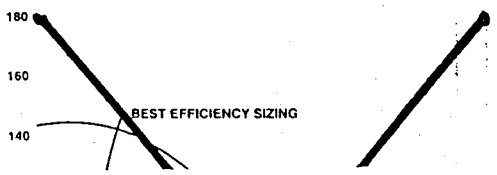
Package 52 – 1-1/2"	Package 53 – 2"	Package 72 – 2-1/2"	Package 73 – 3"

Pump Performance

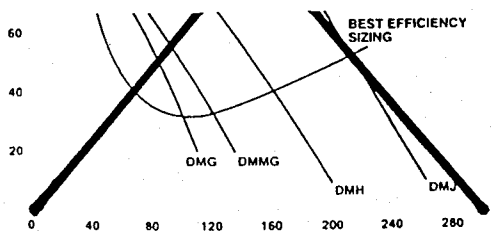
HIGH HEAD



MEDIUM HEAD



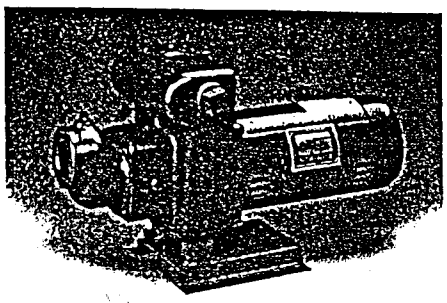
SPRINKLER TRANSFER PUMP
MODEL: DHH3, 3 HP, 230 VOLT, 3-PHASE
COS: 80 GPM @ 69.5' TDH



STA-RITE

Self-Priming Centrifugal Pumps

D
Design Series



This pump (1 thru 2-1/2 HP) is Listed to UL Standards for Safety by Underwriters Laboratories Inc. (UL).

Some of the fastest priming pumps on the market. Available in high head or medium head series. Feature leak-proof mechanical seals, easy service design, heavy-duty motors, rugged construction. Available in 1-5 HP. Special impeller and air volume control tapping.

Order suction flange with flapper check separately.

Materials

Body and Base – close-grained cast iron

Impeller – Noryl® on 1 through 2-1/2 HP, bronze on 3 and 5 HP

Diffuser – cast iron

Shaft – carbon steel inside removable shaft sleeve of stainless steel

Ordering Information

HIGH HEAD

HP	Catalog No.	Pipe Tapping Sizes Suct.	Pipe Tapping Sizes Disch.	Motor Voltage	Phase	Max. Load Amps	Approx. Wt. Lbs.
1/2	DHE	1-1/2"	1-1/2"	115/230	1	14.8/7.4	65
1	DHE3	1-1/2"	1-1/2"	230/460	3	3.6/1.8	65
1-1/2	DHF	1-1/2"	1-1/2"	115/230	1	19.2/9.6	72
1-1/2	DHF3	1-1/2"	1-1/2"	230/460	3	4.7/2.35	72
2	DHG	2"	2"	230	1	12.0	113
2	DHG3	2"	2"	230/460	3	6.8/3.4	113
2-1/2	DHHG	2"	2"	230	1	12.0	120
2-1/2	DHHG3	2"	2"	230/460	3	8.5/4.25	120
3	DHH	2"	1-1/2"	230	1	13.4	144
3	DHH3	2"	1-1/2"	230/460	3	8.6/4.3	144
5	DHJ	2-1/2"	2"	230	1	22	184
5	DHJ3	2-1/2"	2"	230/460	3	13.2/6.6	184

D SERIES – Order Suction Flange Separately

MEDIUM HEAD

HP	Catalog No.	Pipe Tapping Sizes Suct.	Pipe Tapping Sizes Disch.	Motor Voltage	Phase	Max. Load Amps	Approx. Wt. Lbs.
2	DMG	1-1/2"	1-1/2"	230	1	12.0	86
2	DMG3	1-1/2"	1-1/2"	230/460	3	6.8/3.4	86
2-1/2	DMMG	2"	2"	230	1	12.0	93
2-1/2	DMMG3	2"	2"	230/460	3	8.5/4.25	93
3	DMH	2-1/2"	2"	230	1	13.4	137
3	DMH3	2-1/2"	2"	230/460	3	8.6/4.3	137
5	DMJ	3"	2-1/2"	230	1	22	184
5	DMJ3	3"	2-1/2"	230/460	3	13.2/6.6	184

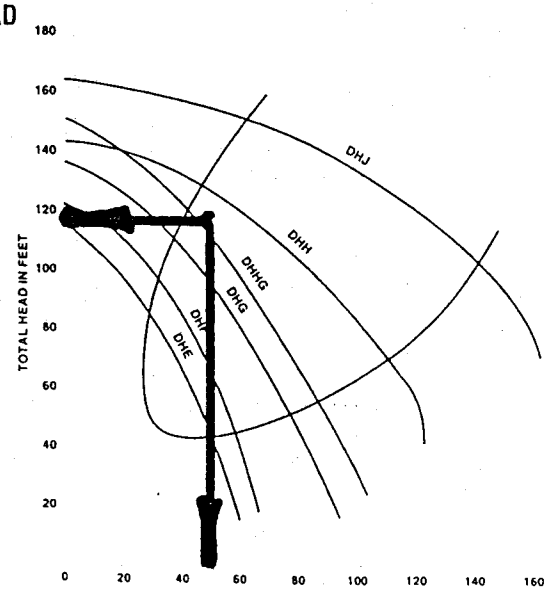
D SERIES – Order Suction Flange Separately

D SERIES FLANGES

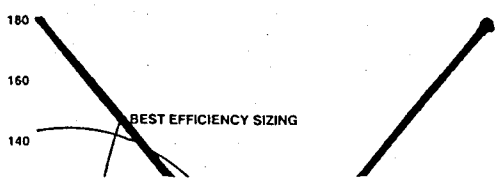
Package 52 – 1-1/2"	Package 53 – 2"	Package 72 – 2-1/2"	Package 73 – 3"

Pump Performance

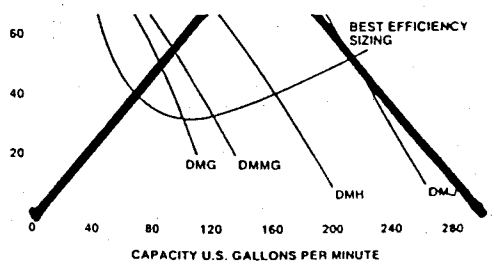
HIGH HEAD



MEDIUM HEAD



SPRINKLER PUMP
MODEL: DHJ3, 5 HP, 230 VOLT, 3-PHASE
COS: 50 GPM @ 50 PSI

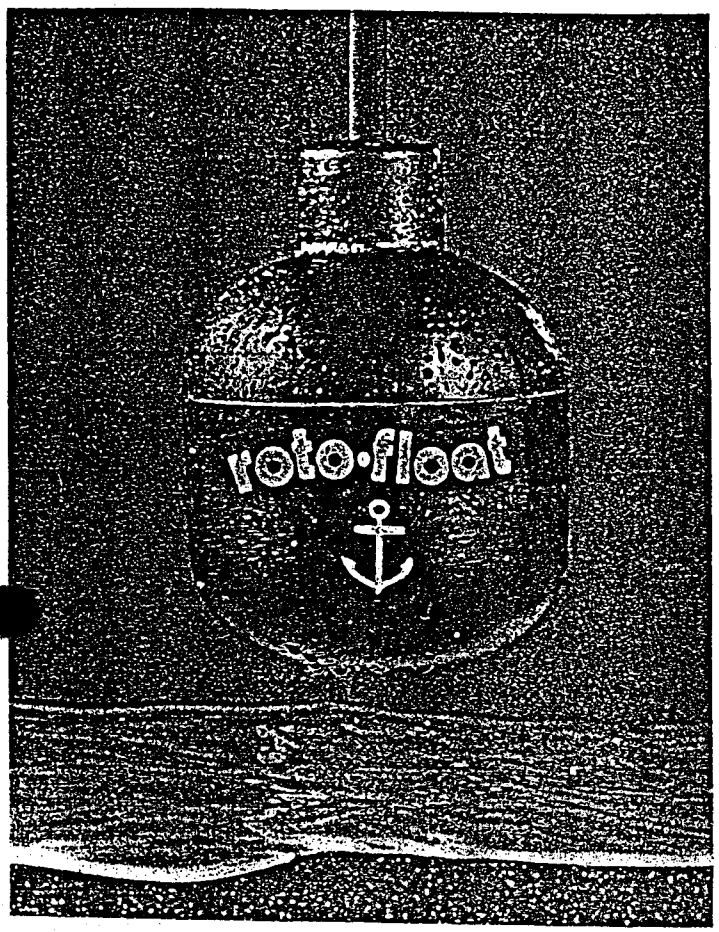


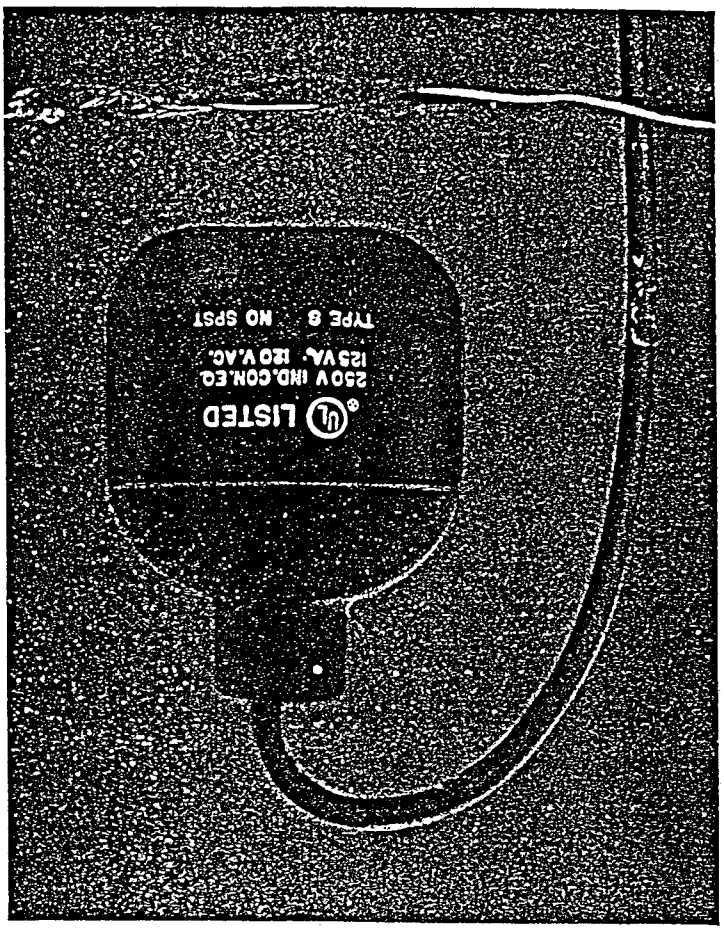
STA-RITE

anchor scientific inc.
Box 378, Long Lake, MN 55356 / 612-473-7115

roto·float
Type S - Suspended
Form 2700-A

TYPE S





The ROTO-FLOAT is a direct acting float switch. Each ROTO-FLOAT contains a single pole mercury switch which actuates when the longitudinal axis of the float is horizontal, and deactuates when the liquid level falls 1" below the actuation elevation.

The float is a chemical resistant polypropylene casing with a firmly bonded electrical cable protruding. One end of the cable is permanently connected to the enclosed mercury switch and the entire assembly is encapsulated to form a completely water tight and impact resistant unit. Type S — Suspended has built in weight.

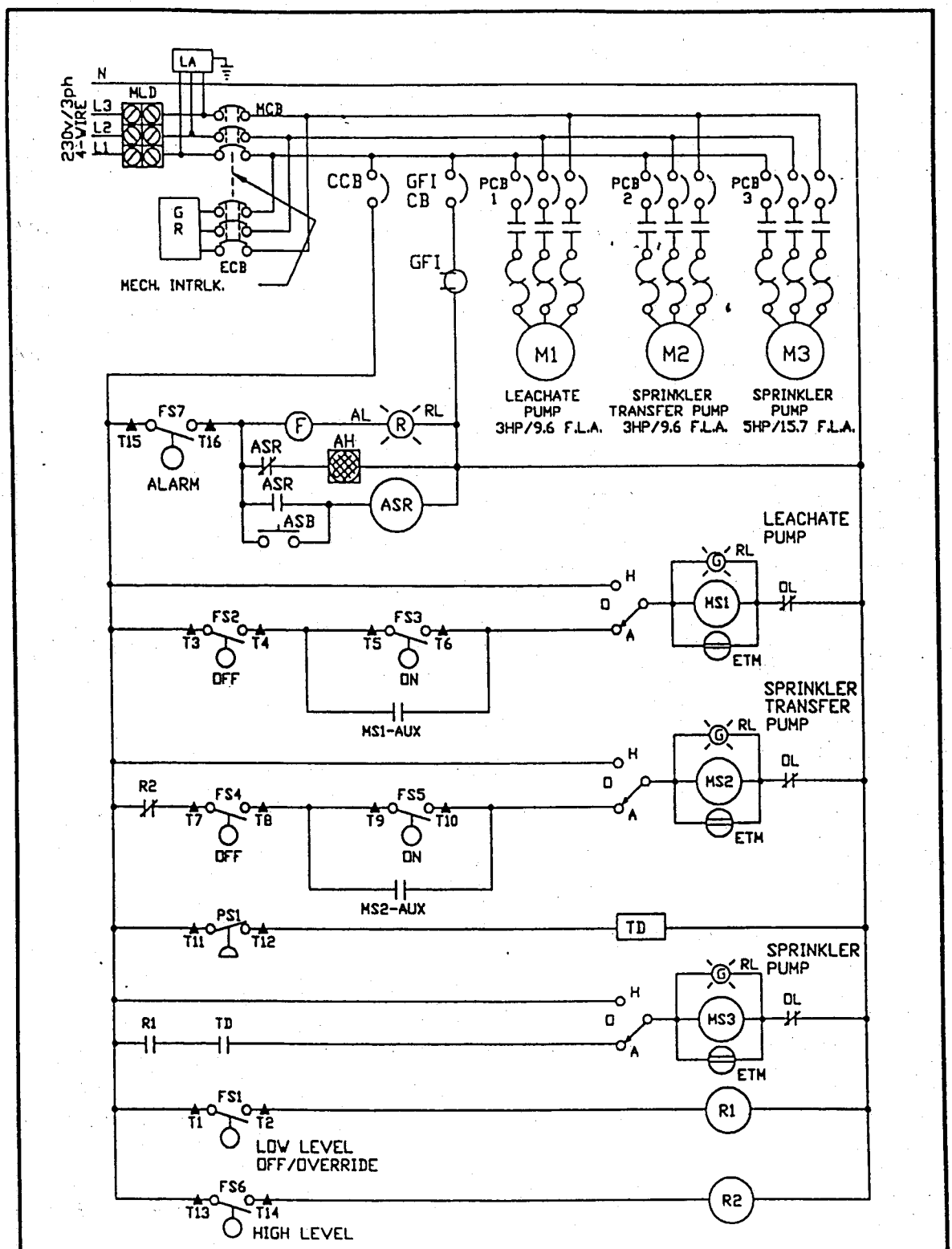
ROTO-FLOATS can be mounted on a support pipe (type P) or suspended from above (type S). Advantages of the ROTO-FLOAT are low cost, simplicity and reliability.

UL Listed
- Pilot Duty
- Industrial Control Equipment

CABLE

V.C. type STO #18 conductors (41 strand) rated 600 volts • Various lengths available • See table of models • Non-standard lengths also available on special order.

Switch Arrangement	Cable *Length	Suspended Type S Model No.	Ship. Wt.
Normally Open	20	S20NO	4#
	30	S30NO	4 1/2#
	40	S40NO	5 1/4#
Normally Closed	20	S20NC	4#
	30	S30NC	4 1/2#
	40	S40NC	5 1/4#



CUST: MEYER & GABBERT, INC

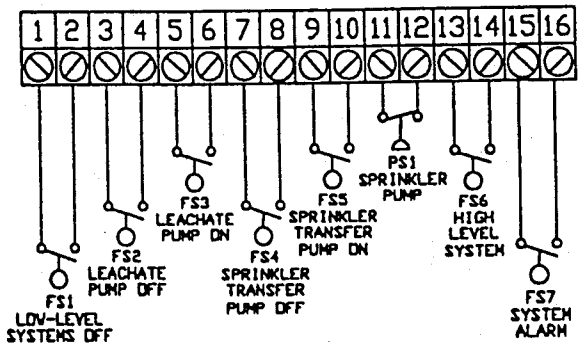
PROJ: C & D RECYCLING FACILITY

UNITRON CONTROLS
SUBSIDIARY OF BARNEY'S PUMPS, INC.
3909 HWY. 98 SOUTH
P. O. BOX 3529-33802
LAKELAND, FLORIDA 33813
(941) 665-8500
FAX: (941) 665-2165

DATE: 9/17/98	BPI#: 05713
REV. DATE:	DRAWN BY: JCK
REV. DATE:	DRAWING #: 05713
REV. DATE:	PAGE: 1

BILL OF MATERIALS

	ENCLOSURE	STAHLIN, N302410RT F.G.
MCB	MAIN CIRCUIT BREAKER	SQ-D, QOU360
ECB	EMERGENCY CIRCUIT BREAKER	SQ-D, QOU360
PCB1,2	PUMP CIRCUIT BREAKER	SQ-D, QOU315
PCB3	PUMP CIRCUIT BREAKER	SQ-D, QOU330
CCB	CONTROL CIRCUIT BREAKER	SQ-D, QOU110
GFICB	GFI CIRCUIT BREAKER	SQ-D, QOU115
MS1,2	STARTER	SQ-D, 8911 DPS033
OL	HEATER -MS1,2	SQ-D, B 17.5
OL	HEATER - MS3	SQ-D, B 28.0
GR	GENERATOR RECEPTACLE	RUS-STOLL, JRSB634HR
ETM	ELAPSED TIME METER	EATON, E42DIR48230
AL	ALARM LIGHT	INGRAM, LRXB-40
F	FLASHER	INGRAM, FL-120-60
AH	ALARM HORN	FLOYD BELL, MW-09-201-Q
ASB	ALARM SILENCE BUTTON	SQ-D, 9001 SKR1BH5
HOA	HAND OFF AUTO SWITCH	CARLING, 2FC53-73
RL	RUN LIGHT	DIALCO, 95-5710-09-301
GFI	CONVENIENCE RECEPTACLE	LEVITON, 6598-I
TD	T.D. RELAY	DIVERSIFIED, TBC-120-ABA (ON DELAY)
ASR	ALARM SILENCE RELAY	AA ELEC, AAEKUP14A 120V
ASR	LIGHTNING ARRESTOR	DITEK, DTK-240-3CM



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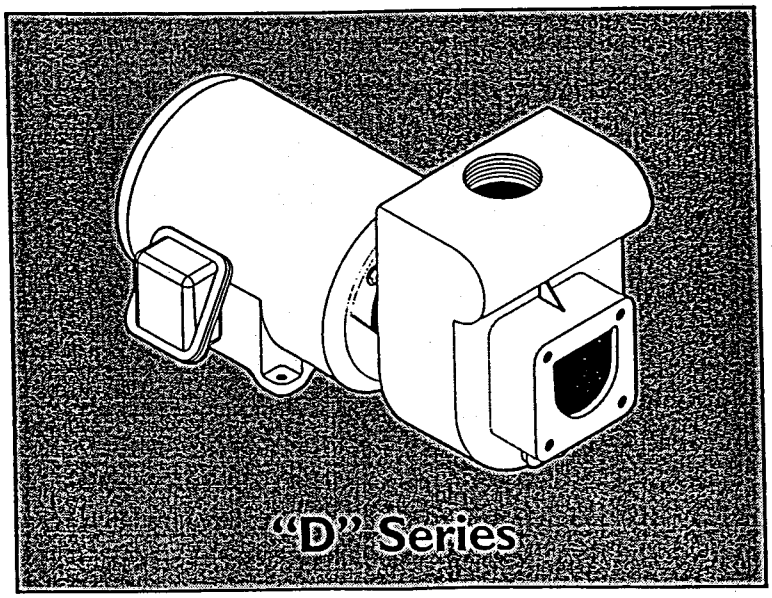
REV. DATE:	PAGE: 2

STA-RITE®

293 Wright Street, Delavan, WI 53115

OWNER'S MANUAL

Self-Priming Centrifugal Pumps



Installation/Operation/Parts

For further operating, installation, or maintenance assistance:

Call 1-414-728-5551

S976 (Rev. 2/4/98)

READ AND FOLLOW SAFETY INSTRUCTIONS!

⚠ **This is the safety alert symbol.** When you see this symbol on your pump or in this manual, look for one of the following signal words and be alert to the potential for personal injury:

⚠ DANGER warns about hazards that **will** cause serious personal injury, death or major property damage if ignored.

⚠ WARNING warns about hazards that **can** cause serious personal injury, death or major property damage if ignored.

⚠ CAUTION warns about hazards that **will** or **can** cause minor personal injury or property damage if ignored.

The label NOTICE indicates special instructions which are important but not related to hazards.

Carefully read and follow all safety instructions in this manual and on pump.

Keep safety labels in good condition.

Replace missing or damaged safety labels.

Make workshops childproof; use padlocks and master switches; remove keys.

GENERAL SAFETY

⚠ CAUTION **Do not touch an operating motor.** Modern motors are designed to operate at high temperatures. To avoid burns when servicing pump, allow it to cool for 20 minutes after shut-down before handling.

Do not allow pump or any system component to freeze. To do so will void warranty.

Pump water only with this pump.

Periodically inspect pump and system components.

Wear safety glasses at all times when working on pumps.

Keep work area clean, uncluttered and properly lighted; store properly all unused tools and equipment.

Keep visitors at a safe distance from the work areas.

⚠ WARNING **Pump body may explode if used as a booster pump unless relief valve capable of passing full pump flow at 75 psi is installed.**

⚠ WARNING

Hazardous voltage. Can shock, burn, or cause death.

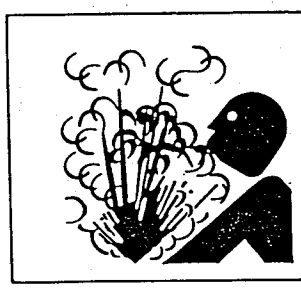
Ground pump before connecting to power supply. Disconnect power before working on pump, motor or tank.

⚠ Wire motor for correct voltage. See "Electrical" section of this manual and motor nameplate.

⚠ Ground motor before connecting to power supply.

⚠ Meet National Electrical Code, Canadian Electrical Code, and local codes for all wiring.

⚠ Follow wiring instructions in this manual when connecting motor to power lines.



⚠ WARNING

Hazardous pressure! Install pressure relief valve in discharge pipe.

Release all pressure on system before working on any component.

Thank you for purchasing a top quality, factory tested pump.

LIMITED WARRANTY

Sta-Rite warrants to the original consumer of the products listed below, that they will be free from defects in material and workmanship for the Warranty Period from the date of original installation or manufacture as noted.

Product	Warranty Period
Water Systems Products – jet pumps, small centrifugal pumps, submersible pumps and related accessories	*whichever occurs first:* 1 year from date of original installation, or 2 years from date of manufacture
Con-Aire® Tanks	5 years from date of original installation
Epoxy-Line Tanks	3 years from date of original installation
Sump/Sewage/Effluent Products	1 year from date of original installation, or 2 years from date of manufacture

Our warranty will not apply to any product that has been subject to negligence, misapplication, improper installation or maintenance. In the event a three phase submersible motor is operated with single phase power through a phase converter, or if three-leg ambient compensated, extra-quick trip overload relays of recommended size are not used, our warranty is void.

Buyer's only remedy and Sta-Rite's only duty is to repair or replace defective products (at Sta-Rite's choice). Buyer agrees to pay all labor and shipping charges associated with this warranty and to request warranty service through the installing dealer as soon as a problem is discovered. If warranty service is requested more than 30 days after the Warranty Period has ended, it will not be honored.

STA-RITE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE WARRANTY PERIOD PROVIDED HEREIN.

Certain states do not permit the exclusion or limitation of incidental or consequential damages or the placing of limitations on the duration of an implied warranty, therefore, the limitations or exclusions herein may not apply. This warranty sets forth specific legal rights and obligations, however, additional rights may exist, which may vary from state to state.

Supersedes all previous publications.

Sta-Rite Industries, Inc. 293 Wright St., Delavan, WI 53115

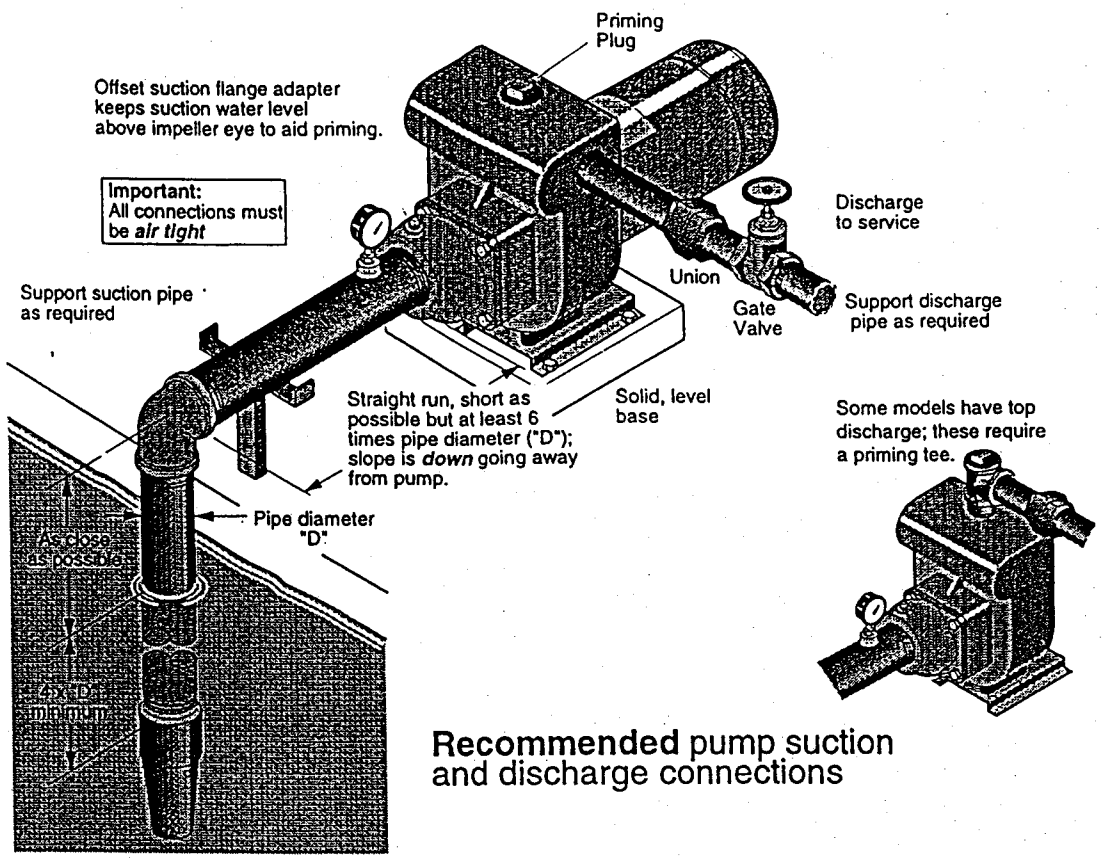


Figure 1

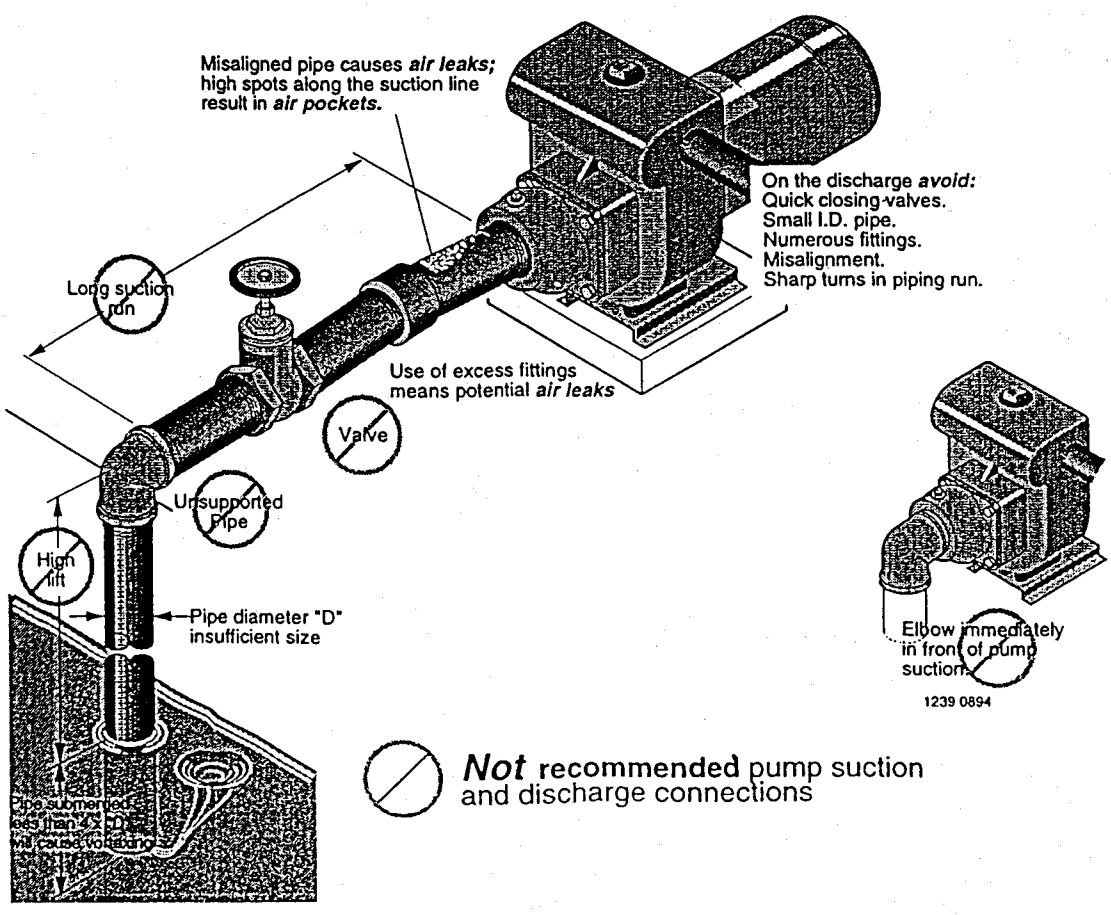


Figure 2

LOCATION OF UNIT

Locate the pump as near the liquid source as possible, using a short, direct suction pipe. Keep the static suction lift (vertical distance between the center line of the pump and the liquid level) to a minimum. Mount the pump on a solid, level foundation, which provides a rigid and vibration-free support. It should be located where the unit is readily accessible for service and maintenance. The pump should be protected against flooding and excessive moisture.

PIPING

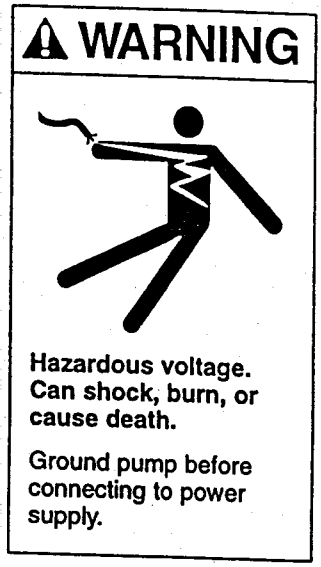
Both suction and discharge piping should be independently supported at a point near the pump to avoid strains being placed on the pump. Start all piping at pump to avoid strains left by a gap at last connection.

SUCTION PIPING

The suction pipe must be kept free of leaks. The suction pipe must have a gradual slope upward to the pump. Avoid any fittings which may cause an air trap. On units that have a suction fitting, a check valve is a built-in feature and no foot valve is required.

DISCHARGE PIPING

A gate valve and union should be installed in the discharge line. For removal of the pump for service, close the gate valve, and disconnect at union.



⚠WARNING Disconnect power at service panel before connecting motor. Single phase motors come factory wired for 230 volt operation. Do not alter wiring in single phase motors. Match motor voltage to power supply voltage. Do not connect three phase motors to single phase power supply or single phase motors to three phase power supply.

⚠ Ground motor before connecting to electrical power supply.

⚠ Failure to ground motor can cause severe or fatal electrical shock hazard.

⚠ Do not ground to a gas supply line.

⚠ To avoid dangerous or fatal electrical shock, turn OFF power to motor before working on electrical connections.

⚠ Supply voltage must be within ±10% of nameplate voltage. Incorrect voltage can cause fire or seriously damage motor and voids warranty. If in doubt consult a licensed electrician.

⚠ Use wire size specified in Wiring Chart. If possible, connect pump to a separate branch circuit with no other appliances on it.

WIRING

Step 1. Install, ground, wire and maintain this pump in accordance with your local electrical code and all other codes and ordinances that apply. Consult your local building inspector for local code information.

Step 2. Ground the pump permanently using a wire of size and type specified by local or National Electrical Code.

⚠ Do not ground to a gas supply line.

Step 3. Connect ground wire first. Connect to ground first, then to green grounding terminal provided (identified as GRD or ⏚). Make ground connection to this terminal. Do not connect motor to electrical power supply until unit is permanently grounded; otherwise serious or fatal electrical shock hazard may be caused.

Step 4. For best ground connection, connect to a grounded lead in the service panel or to a metal underground water pipe or well casing at least 10 ft. long. If plastic pipe or insulated fittings are used, run ground wire directly to the metal well casing or use ground electrode furnished by the power company.

⚠ CAUTION Before using pump, check your motor nameplate for voltage. Your electric supply voltage and the stamped nameplate voltage **must agree.** Motors stamped 200 volts only or 230 volts only, **must be used with that voltage only.** Motors stamped with two voltages (for example 230/460 volts), may be used with either supply voltage. For these motors check connections against wiring diagram on motor nameplate and make any changes necessary to agree with your supply voltage. If in doubt, call a licensed electrician. Incorrect voltage will cause serious damage to the motor.

Some models are equipped with three phase motors. Three phase motors require magnetic starters.

To check motors for proper rotation: Remove the motor end cover. This exposes the motor shaft. If hook-up is correct, the shaft will rotate clockwise. If rotation is not clockwise, see motor nameplate for hookup information. BE SURE power is off to the motor when working on electrical connections.

⚠ CAUTION Motor normally operates at high temperature and will be too hot to touch. Before handling pump or motor, stop motor and allow it to cool for 20 minutes.

TABLE I – Recommended Wire and Fuse Sizes

MOTOR HP	PHASE	VOLTS	MAX. LOAD AMPS	BRANCH FUSE* RATING AMPS	DIAMETER IN FEET FROM MOTOR TO METER					
					0′ TO 50′	51′ TO 100′	101′ TO 200′	201′ TO 300′	301′ TO 400′	401′ TO 500′
					WIRE SIZE					
3	1	230	17.0	25	12	12	12	10	8	8
3	1	200	19.6	30	10	10	10	10	8	8
3	3	200	11.0	15	14	14	14	12	10	10
3	3	230	9.6	15	14	14	14	12	12	10
3	3	460	4.8	15	14	14	14	14	14	14
5	1	230	28.0	40	8	8	8	8	6	6
5	1	200	32.2	50	8	8	8	8	6	6
5	3	200	17.5	25	10	10	10	10	8	8
5	3	230	15.2	20	12	12	12	10	10	8
5	3	460	7.6	15	14	14	14	14	14	14

*A Fusetron is recommended instead of a fuse in any motor circuit.

IMPORTANT: BE SURE lead wire opening on end of motor is fully sealed when conduit or a pressure switch is not used. Failure to seal it properly will allow dirt, rain, bugs, etc. to enter back compartment of motor through conduit opening and cause switch malfunction.

⚠ CAUTION **Never run pump dry.** Running pump without water may cause pump to overheat, damaging seal and possibly causing burns to persons handling pump. Fill pump with water before starting.

⚠ WARNING **Never run pump against closed discharge. To do so can boil water inside pump,** causing hazardous pressure in unit, risk of explosion and possibly scalding persons handling pump.

PRIMING THE PUMP

A tee installed in the discharge opening of the pump, and provided with a priming plug at the top position, will enable you to fill the pump with liquid. Once filled and the priming plug replaced, the pump will prime. The pump should prime itself time after time, as long as the built-in check valve functions.

MAINTENANCE

Little or no maintenance to pump is required other than possible replacement of shaft seal after a reasonable period of operation (see Page 10).

Lubricate motor according to motor manufacturer's in-structions. Periodic greasing is required for most motors.

PUMP STORAGE

Drain pump to prevent freezing.

Keep motor dry and loosely covered. Do not wrap with plastic sheeting; trapped moisture could cause corrosion or insulation deterioration.

NOTE: A good rust inhibitor in the liquid end of cast iron pumps is recommended to prevent excessive corrosion.

PUMP START-UP AFTER STORAGE

Replace all drain plugs and close all drain valves in system.

Be sure all connections are tightly sealed.

After initial check is made, fill pump according to "Priming the Pump," above.

SHAFT SEAL REPLACEMENT

IMPORTANT: The highly polished and lapped faces of the seal are easily damaged. **Follow instructions and handle the seal with care.**

⚠ WARNING
Hazardous voltage

Be sure unit is grounded and power disconnected before attempting any work on pump or motor.

REMOVAL OF OLD SEAL

Refer to Figure 3 for Mechanical Seal parts indentificaiton.

Step 1. Disconnect all power to pump.

Step 2. Close isolation valves to cut pump off from system.

Step 3. Drain pump; be sure to vent pump.

Step 4. Remove motor hold down bolts and bolts holding adapter/seal plate (Key No. 6, Page 11) to pump body (Key No. 20). Slide motor, adapter/ seal plate and impeller (Key No. 12) backward to clear pump body.

Step 5. Remove impeller screw and washer from end of shaft and slide impeller off of shaft.

Step 6. Unbolt adapter/seal plate from motor.

Step 7. Use two screwdrivers (Figure 4) or bearing puller to carefully separate motor from adapter/seal plate, bringing rotating half of seal (Key No. 10) off with adapter/seal plate. Shaft sleeve (Key No. 2A) may come off with seal.

Step 8. Use hammer, if necessary, to drive shaft sleeve out of seal. Clean up shaft sleeve with emery paper if necessary.

Step 9. Place adapter/seal plate face down on bench and drive old stationary half of seal out of adapter/seal plate by carefully taping with screwdriver and hammer (Figure 5).

Step 10. Use a wire brush to thoroughly clean adapter/seal plate cavity. Be sure all dust and grime are out of seal cavity before installing new seal.

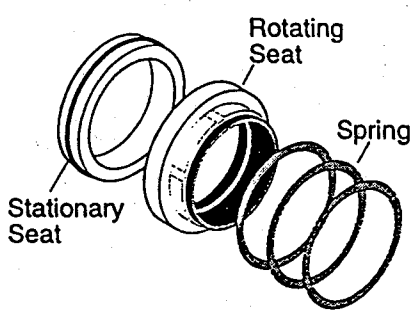


Figure 3

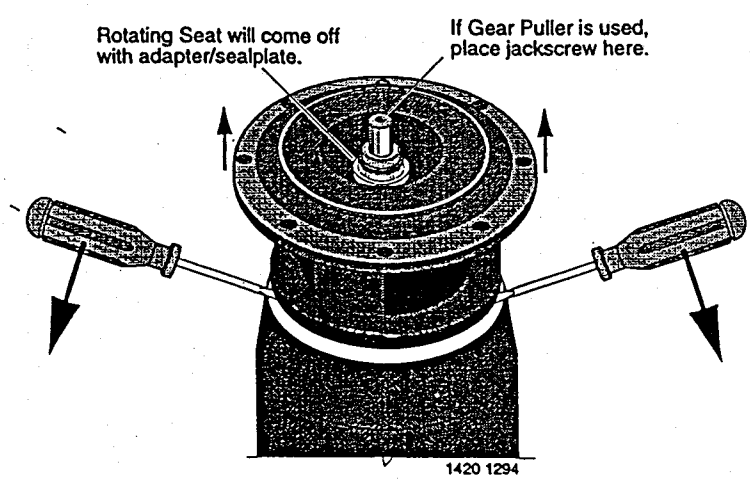


Figure 4

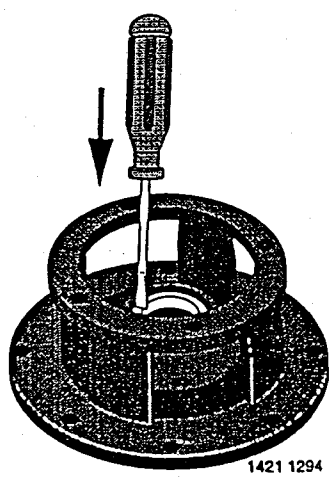


Figure 5

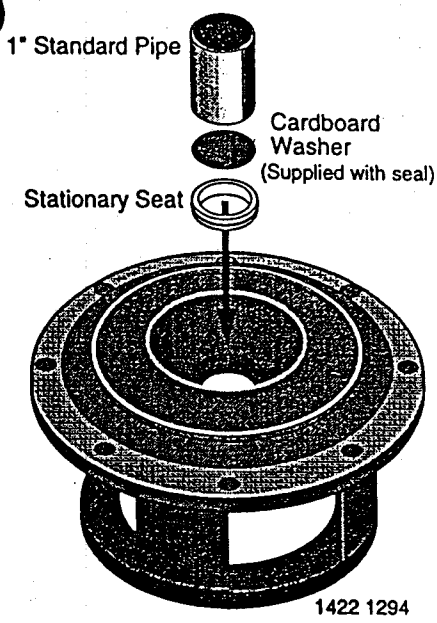


Figure 6

INSTALLING NEW SEAL

Step 1. **IMPORTANT:** Seal faces are highly polished and lapped. **Handle with care.** Any mar, nick or scratch on seal face will cause it to leak. **BE SURE** to install with polished faces toward each other.

Step 2. Clean polished surface of ceramic seat with clean cloth.

Step 3. Wet O-Ring around ceramic seat with liquid soap.

Step 4. Press stationary (ceramic) half of seal into cavity firmly and squarely with thumb pressure. If it does not seal properly, remove and place face up on bench. Re-clean adapter/seal plate cavity. Seal should now seat correctly.

Step 5. If seal does not seat after recleaning adapter/seal plate cavity, place a cardboard washer over polished face of seal and **carefully** press into place using a piece of 1" standard pipe as a press. (Figure 6). **NOTE: BE SURE** you do not scratch seal face.

Step 6. Dispose of cardboard washer and recheck seal face to be sure it is free of dirt, foreign particles, scratches and grease.

7. Inspect shaft and shaft sleeve to be sure they are clean.

8. Re-install O-Ring, shaft sleeve and slinger (Key No. 4) on shaft. **NOTE:** A small amount of grease or Never-Seez under shaft sleeve will help prevent shaft and sleeve from freezing together when pump is in service.

9. Remount adapter/seal plate to motor, being careful not to scratch seal face.

Step 10. Apply liquid soap to inside diameter and outside face of rubber drive ring on rotating half of seal.

Step 11. Slide seal assembly onto shaft sleeve (sealing face first) far enough so that seal spring is located on shaft sleeve. **NOTE: Be careful not to nick carbon seal face when passing it over end of shaft sleeve.**

Step 12. Slide impeller and gaskets (Key Nos. 12 and 11) onto shaft with key (Key No. 3) in position. Be sure to maintain proper order as shown in Exploded View, Page 11.

Step 13. Install washer, gaskets, and impeller screw (Key Nos. 14, 15, 16, 17) on end of shaft and tighten screw until it is snug. This should locate seal in place and bring seal faces together.

Step 14. Re-install motor, adapter and impeller assembly on volute, using new gasket (Key No. 7).

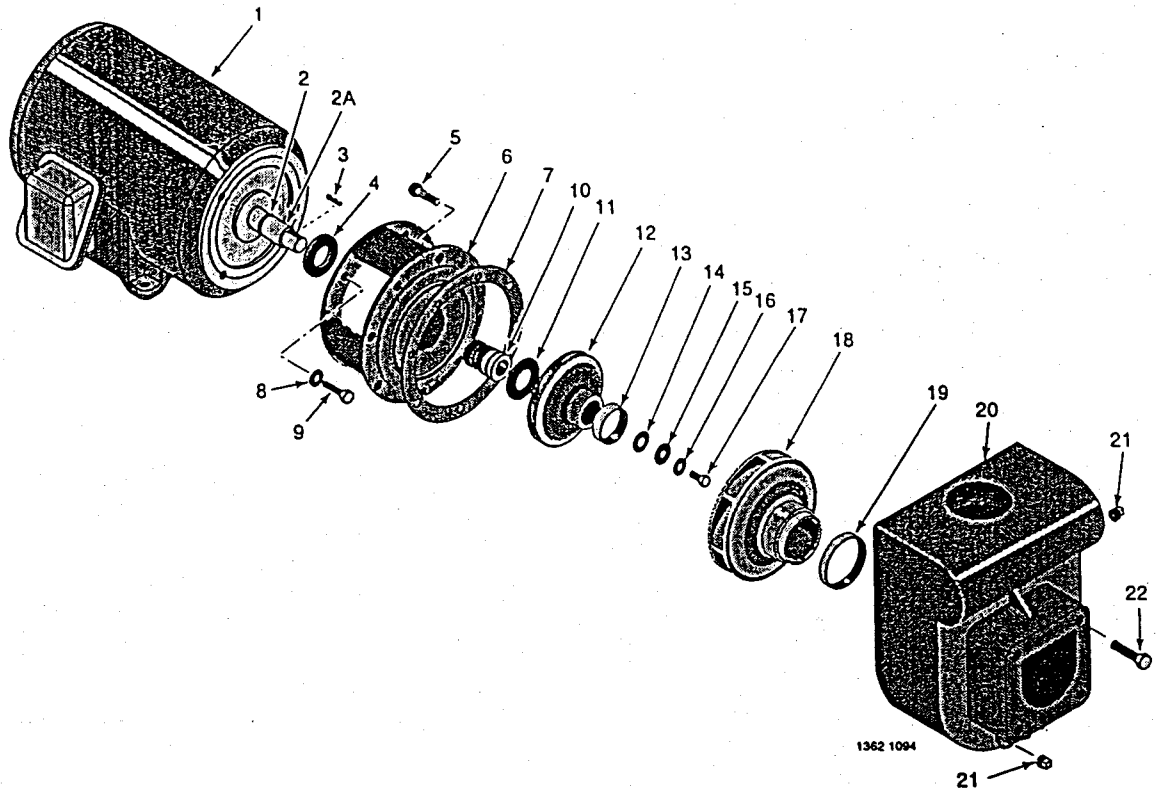
Step 15. Re-install motor hold-down bolts.

Step 16. Check all bolts for tightness.

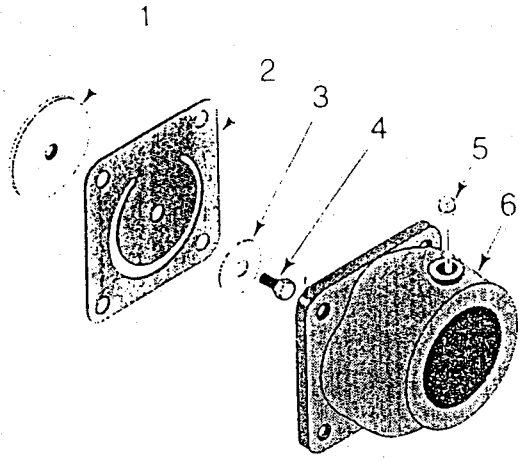
Step 17. Pumps below water level: Close drains; open isolation valves to fill pump. Pumps above water level: Prime pump. Open isolation valves if they were closed at disassembly.

Step 18. When pump is full, close air vents.

Step 19. Reconnect power to pump and system is ready for operation.



Key No.	Part Description	No. Used	3 HP DMH-171 DMH3-171 DM2H-171 DM2H3-171	5 HP DMJ-172 DMJ3-172 DM2J-172 DM2J3-172	3 HP DHH-169 DHH3-169 DH2H-169 DH2H3-169	5 HP DHJ-170 DHJ3-170 DH2J-170 DH2J3-170
1	Motor - 60 Cycle - 230V, Single Phase	1	C218-177	C218-180	C218-177	C218-180
1	Motor - 60 Cycle - 230/460V, Three Phase	1	C218-179	C218-182	C218-179	C218-182
1	Motor - 60 Cycle - 200V, Single Phase	1	C218-191	C218-192	C218-191	C218-192
1	Motor - 60 Cycle - 200V, Three Phase	1	C218-178	C218-181	C218-178	C218-181
2	O-Ring	1	U9-265	U9-265	U9-265	U9-265
2A	Sleeve	1	C23-58	C23-58	C23-58	C23-58
3	Key - Square	1	U65-42A	U65-42A	U65-42A	U65-42A
4	Water Slinger - Single Phase	1	C69-15	C69-15	C69-15	C69-15
4	Water Slinger - 230/460V, Three Phase	1	C69-16	C69-15	C69-16	C69-15
4	Water Slinger - 200 V, Three Phase	1	C69-15	C69-15	C69-15	C69-15
5	Capscrew - 3/8 - 16 x 7/8" Lg.	8	U30-73ZP	U30-73ZP	U30-73ZP	U30-73ZP
6	Adapter	1	C2-66	C2-66	C2-66	C2-66
7	Gasket - Adapter	1	C20-46	C20-46	C20-46	C20-46
8	Lockwasher - 3/8"	4	U43-12ZP	U43-12ZP	U43-12ZP	U43-12ZP
9	Capscrew - 3/8 - 16 x 7/8" Lg.	4	U30-73ZP	U30-73ZP	U30-73ZP	U30-73ZP
10	Shaft Seal	1	U109-220	U109-220	U109-220	U109-220
11	Gasket - Seal	1	C20-101	C20-101	C20-101	C20-101
12	Impeller	1	C5-246	C5-247	C5-248	C5-249
13	Wear Ring	1	J23-5	C23-14	J23-5	J23-5
14	Gasket	1	C20-100	C20-100	C20-100	C20-100
15	Washer - Impeller	1	C43-45SS	C43-45SS	C43-45SS	C43-45SS
16	Gasket	1	C43-46	C43-46	C43-46	C43-46
17	Screw - Impeller - 3/8 - 16 x 3/4" Lg.	1	U30-72SS	U30-72SS	U30-72SS	U30-72SS
18	Volute Diffuser (w/Wear Ring, Key No. 13)	1	C101-126	C101-126B	C101-132	C101-132
19	Diffuser Ring	1	C21-2	C21-2	C21-2	C21-2
20	Pump Body	1	C76-12	C76-12C	C76-12B	C76-12
21	Pipe Plug - 1/4" NPT	2	U78-941ZPV	U78-941ZPV	U78-941ZPV	U78-941ZPV
22	Capscrew - 5/16 - 18 x 3/4" Lg.	4	U30-60ZP	U30-60ZP	U30-60ZP	U30-60ZP



SUCTION FLANGE ASSEMBLY

Key No.	Part Description	No. Used	Part Symbol
1	Valve Plate	1	C61-5SS
2	Gasket - Flange	1	C20-15
3	Valve Washer	1	C43-15SS
4	Machine Screw 1/4-20 x 1/2"	1	U30-50SS
5	Pipe Plug - 1/4" NPT Sq. Hd.	1	U78-57SS
6	Suction Flange 2" NPT	1	C3-22A
6	Suction Flange 2-1/2" NPT	1	C3-74
6	Suction Flange 3" NPT	1	C3-74B
•	Nut, 1/4-20, Hex	1	U36-36SS
	Suction Flange Assembly-Complete 1-1/2" NPT		C203-22
	Suction Flange Assembly-Complete 2" NPT		C203-22A

Appendix I

List of Facilities Accepting Waste and Recyclable Materials (See Note 1)

MATERIALS	FACILITY
C&D Debris	
Screened overs	Waste Management Gulf Coast Landfill
Screened unders	On-site Class I Landfill (See Note 2)
Grinded Waste	On-site Class I Landfill
Cardboard	Gulf Coast Fibres, Inc.
Crushed Concrete	C&M Road Builders Incorporated, or public market
Scrap Metal	Scrap-all of Sarasota, Inc.
Class I Solid Waste	Sarasota County Central County Solid Waste Disposal Complex on-site Class I Landfill
e-waste	Sarasota County Central County Solid Waste Disposal Complex on-site Electronic Collection Site
Dirt from Clean Concrete	Sarasota County Central County Solid Waste Disposal Complex on-site Class I Landfill for Initial or intermediate soil cover or public market
Special Wastes and Batteries	Sarasota County Household Chemical Collection Facility located at the closed Bee Ridge Landfill.
Carpet Padding	Lakeland Florida recycler
Mulch from Clean Wood	Public market or used at on-site Class I Landfill
Recyclable Building Materials	On-site sales office for sale to public market

Note 1. **Other facilities may be used after approval by FDEP.**

Note 2. **May be used for alternative initial cover at the on-site Class I Landfill, if approved by FDEP as a specific condition of the Class I Landfill permit, through a permit modification or by an FDEP letter approval.**

GULF COAST LANDFILL
A WASTE MANAGEMENT COMPANY

P.O. Box 7314
Fort Myers, Florida 33911
(941) 334-4119
(941) 332-3674 Fax

September 25, 2003

Meyer & Gabbert Excavating Contractors, Inc.
8001 Fruitville Road
Sarasota, FL 34240

Attn: Jim Gabbert

Dear Mr. Gabbert;

This is to advise that Gulf Coast Landfill is accepting from Meyer & Gabbert, Class III construction and demolition material for disposal.

Gulf Coast Landfill is operating under Department of Environmental Protection, Permit Number 0128933-007-SO/T3, dated December 4, 2002.

If there are any questions, please contact me at 239/455-8062.

Sincerely,

John W. Wong
District Manager

Cc: Sara Brazerol

Operating Hours
Monday through Saturday
7AM to 4:15 PM
Tip fee $35/ton
Haul Distance 68 miles

Department of Environmental Protection

Jeb Bush
Governor

South District
P.O. Box 2549
Fort Myers, Florida 33902-2549

David B. Struhs
Secretary

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

COPY

December 4, 2002

In the matter of an
Application for Permit by:

Waste Management Inc. of Florida
c/o Charles Campagna, Area Vice President
2859 Paces Ferry Road, Suite 1600
Atlanta, Georgia 30339

Re: Lee County - SW
Gulf Coast Class III Landfill and
Recycling Facility
DEP File No. 0128933-007-SO/T3
Southwest Coast EMA

Enclosed is Permit No. 0128933-007-SO/T3 to operate:

A Solid Waste Disposal Unit (Class III Landfill) and Recycling Facility, comprising 35 acres as a vertical expansion on the closed Parcel 2 (an unlined Class I Landfill) of the existing Gulf Coast Landfill site, specifically identified as Gulf Coast Class III Landfill and Recycling Facility, located at 11990 State Road 82 East, City of Fort Myers in Lee County, Florida, issued under Sections 403.061, 403.087 and 403.707 of the Florida Statutes (F.S.) and Florida Administrative Code (F.A.C.) Rules 62-4, 62-25, 62-160, 62-302, 62-522 and 62-701.

Any party to this order (permit) has the right to seek judicial review of the permit under Section 120.68 of the Florida Statutes, by the filing of a Notice of Appeal under Rule 9.110 of the Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000 and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within thirty (30) days after this notice is filed with the Clerk of the Department.

Executed in Fort Myers, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Richard W. Cantrell
Director of District Management

Continued...

YAHOO! GetLocal Maps

Maps | Yellow Pages | City Guic

Starting from: A 4000 Knights Trail Rd, Nokomis, FL 34275-3610

Arriving at: B 11990 State Road 82, Fort Myers, FL 33913-9600

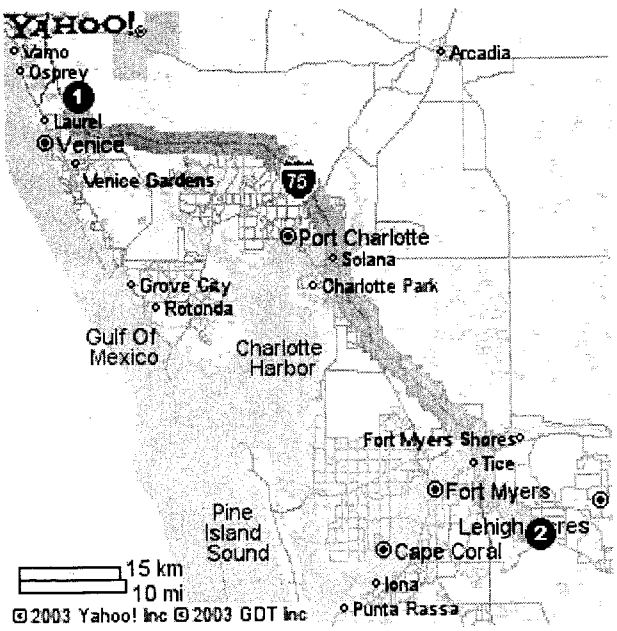
Distance: 67.2 miles **Approximate Travel Time:** 1 hour 21 mins

Directions

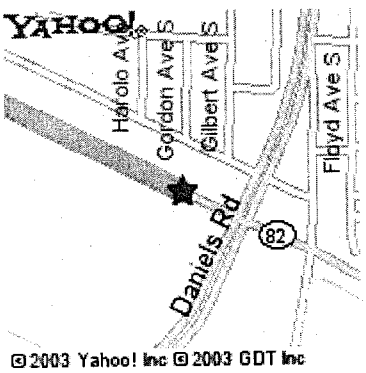
1.	Start at **4000 KNIGHTS TRAIL RD, NOKOMIS** going towards **RUSTIC RD** - go **1.5** mi
2.	Turn R on **LAUREL RD/LAUREL RD E** - go **0.6** mi
3.	Turn L on **RAMP** - go **0.3** mi
4.	Merge on **I-75 SOUTH** - go **57.7** mi
5.	Take the Exit **138** exit - go **0.3** mi
6.	Continue on **RAMP** - go **0.1** mi
7.	Turn L on **DR MARTIN LUTHER KING BLVD** - go **0.1** mi
8.	**DR MARTIN LUTHER KING BLVD** becomes **STATE ROAD 82** - go **1.8** mi
9.	**STATE ROAD 82** becomes **IMMOKALEE RD/STATE ROAD 82** - go **4.8** mi
10.	Arrive at **11990 STATE ROAD 82, FORT MYERS**

When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.

Full Route



Destination



11990 State Road 82
Fort Myers, FL 33913-9600

Gulf Coast Fibres,Inc.

Paper Brokerage, Exporting, Consulting & Converting

December 31, 2002

To Whom It May Concern:

Gulf Coast Fibres is a regional recycled paper brokerage company handling all grades of recycled paper. Gulf Coast Fibres has a long-term relationship with Meyer & Gabbert and has purchased cardboard from them for many years. Gulf Coast Fibres maintains high requirements for product quality, and Meyer & Gabbert have met these requirements.

Gulf Coast Fibres intends to continue purchasing recycled materials from Meyer & Gabbert and issue monthly purchase orders for their quality recycled products as their demand dictates.

Sincerely,

Bill Nichols

Bill Nichols
Domestic Fiber Sales

ships with truck freight.

4503 Woodland Corporate Boulevard • Suite 300 • Tampa, FL 33614
(813) 620-4000 • Fax (813) 620-4090

C&M

ROAD BUILDERS INCORPORATED

SARASOTA, FL

December 30, 2002

Meyer & Gabbert Excavating Contractors, Inc.
8001 Fruitville Road
Sarasota, FL 34240

To Whom It May Concern:

C & M Roadbuilders, Inc. is a construction industry leader on the West Coast of Florida. C & M proudly uses recycled products in our projects whenever possible. C & M has a long relationship with Meyer & Gabbert; and as in the past, we will continue to purchase recycled road base and other recycled products from them as part of our ongoing business.

Sincerely,

Mark Mc Cabe, President

Operating Hours
8AM to 5PM
Monday through
Saturday

SCRAP-ALL® OF SARASOTA, INC.

1735 Myrtle Street • SARASOTA, FLORIDA 34234 • Phone: (813) 351-4144 • FAX: (813) 359-2457

December 30, 2002

Meyer & Gabbert Excavating Contractors, Inc.
8001 Fruitville Rd.
Sarasota, Fl. 34240

To Whom It May Concern:

Meyer & Gabbert has been a customer of Scrap-All for several years, and has regularly brought in different types of scrap metal for recycling. Scrap-All will continue to accept different types of scrap metal from Meyer & Gabbert for these recycling purposes.

Sincerely,

Jim Zaccario
General Manager

Operating Hours
8AM to 5PM
Monday through Friday

MEMBER

Class I Waste Disposal is at on-site landfill.

For information on how to dispose of paint, pesticides, motor oil, other chemicals, batteries and hazardous waste items, contact Sarasota County Hazardous Waste Management at (941) 316-1301

We're here to help you

The landfill facilities are open Monday through Saturday 8:00 a.m. to 5:00 p.m. and are closed on Sundays, and the following holidays: New Year's Day, Independence Day, Thanksgiving Day and Christmas Day.

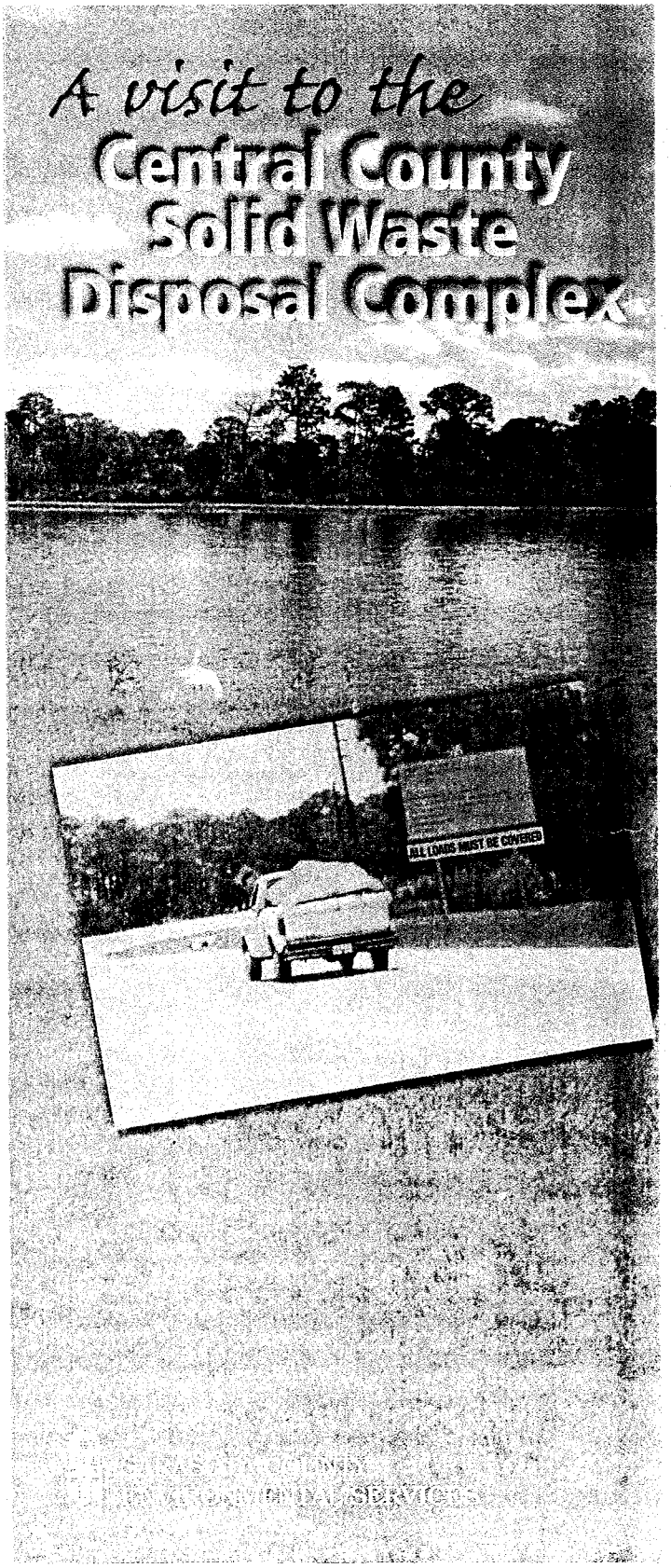
The administration office is open Monday through Friday, 8:00 a.m. to 5:00 p.m., except on County observed holidays.

Telephone: (941) 486-2600
Fax: (941) 486-2620

Central County Solid Waste
Disposal Complex
4000 Knights Trail Road
Nokomis, Florida 34275

SARASOTA COUNTY
ENVIRONMENTAL SERVICES

Recycled Paper
SW0700



SARASOTA COUNTY
CENTRAL COUNTY SOLID WASTE
DISPOSAL COMPLEX

RATES

The following charges will be levied for users of the
Sarasota County Landfill, 4000 Knights Trail Road, Nokomis, Fl.:

SOLID WASTE HAULERS.....$63.77/ton

TIRES.....$62.28/ton

ASBESTOS - friable.....$62.28/ton

MINIMUM CHARGE - Solid Waste.....$7.50

YARD WASTE HAULERS.....$41.37/ton

MINIMUM CHARGE - Yard Waste.....$5.00

VEHICLE WEIGHT DOCUMENTATION.....$5.00

CONSTRUCTION & DEMOLITION DEBRIS.....$48.71/ton
or $10.70 a cubic yard (the lesser of the two)

2/1/2002

J:user/shared/xfiles/scale rates.xls

Longboat Key
North Port
Sarasota
Venice

Business
Children
Community
Education
Emergency
Environment
Government
Health
Home and Garden
Law and Order
Libraries
Licenses, Registrations, and Permits
Parks and Recreation
Seniors
Transportation and Travel

Garbage disposal

Contact Information | Find Additional Services

Disposal of garbage, trash or any material that is non-hazardous or recyclable may be disposed of at the Central County Solid Waste Disposal Complex for a fee. The landfill scalehouse provides method of payment and landfill rates. The rate for garbage disposal, including large household appliances, is $63.77 per ton or a minimum charge of $7.50 for up to 240 lbs.

Related Topics

Find Additional Content

- Directions to landfill

Apply for Occupa
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File Unemplo
For Real Estat
Get Flight Arriva
Get Ro
Get Socia
Look Up P
Look Up Pro
Look Up
Look Up TV
Onl
Pay
Re
Register with
Report
Search Recorde

Contact Information

Phones...

- Voice: (941) 861-1570
- Fax: (941) 486-2620

Locations... Find Additional Locations

* Solid Waste

Location: Central County Solid Waste Disposal Complex
Address: 4000 Knights Trail Road
City: Nokomis
Zip: 34275

more

Appendix J

Fire Safety Inspection Report

SARASOTA COUNTY GOVERNMENT

- Dedicated to Quality Service -

FIRE SAFETY INSPECTION REPORT

6750 Bee Ridge Road
Sarasota, FL 34241
PH (941) 861-2290
FAX (941) 373-7566

DATE: 12/5/03

Business Name: Meyer & Gabbert, Inc. **INVOICE #** 2248

Address: 4000 Knight's Trail, Nokomis **Sq Ft.** 810 **Fee:** $25.00

Contact Name: Jim Gabbert **PH #** 486-B52 **Pager/Cell #** _____

Emergency Contact: Jim Walker **PH #** 488-0128 **PH #** _____

Bill To: _____

Occupancy Type: Business **Inspection Type:** R RC-1 RC-2 RC-3 **# STORIES** 1

# of EXT	ITEM	TYPE	SERVICED BY	DATE	LOCATION
X	Fire Extinguisher	ABC	Gulf Coast	11/03	
NO	FDC		Obstructed Yes or No		
ND	Sprinkler System				
NO	Hood	N/A			
NO	Fire Pump	N/A			
	Knox Box	Yes or No		Keys	Yes or No
X	Alarm	N/A	Gulf Coast	11/03	OFFICE

Alarm Monitored By: EMG

VIOLATIONS: NO violations found.

FAILURE TO CORRECT & PENALTIES – Pursuant to Sarasota County Code Enforcement Ordinances No. 93-006, and Chapter 162, Florida Statutes, empowered by County Ordinance 2000-052, you are notified that items noted in this report are in violation of Florida Fire Prevention Code, or Superseding Ordinances, or other County Ordinances as referenced. Failure to correct the deficiencies on the date specified can result in an affidavit or statement of violation to be filed with the Code Enforcement Special Master, charging you with the violation set out above, upon which a hearing will be held which you may attend. If the Code Enforcement Special Master finds a violation exists, penalties may be imposed in the amount of $250.00 per day, for each day the violation exists beyond the date set for corrective action in this notice.

Inspector R.B Fulwider **Signature of Occupant** Tyrone B. Edwards

Date required for compliance _____ **RC-1** _____ **RC-2** _____ **RC-3** _____

Appendix K

Waste Quantity Reports

CONSTRUCTION AND DEMOLITION FACILITY TONS
MEYER & GABBERT
CENTRAL COUNTY COMPLEX

FY98/99	MULCH	METALS	CONCRETE	WOOD	PLASTICS	CARD-BOARD	MISC-RECYC	SITE BLD UP	DIRT LANDFILL	DAILY COVER	CONCRETE LANDFILL	ROAD BLD UP	TOTAL*	RESIDUE	C&D**
OCT ***	177.86	187.01	304.74	0.00	0.00	20.39	2.18	0.00	0.00	4,742.50	0.00	0.00	5,434.68	37.52	5,468.43
NOV	0.00	134.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3,312.50	0.00	0.00	3,446.96	56.50	4,133.72
DEC	0.00	157.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3,825.00	0.00	0.00	3,982.25	43.18	4,641.40
JAN	0.00	160.42	0.00	0.00	0.00	0.00	1.63	0.00	0.00	3,562.50	0.00	0.00	3,724.55	59.20	4,351.29
FEB	0.00	92.90	0.00	0.00	0.00	0.00	5.85	0.00	0.00	4,237.50	0.00	0.00	4,336.25	37.15	4,203.06
MAR	0.00	214.55	447.50	0.00	0.00	0.00	3.10	0.00	0.00	4,637.50	0.00	0.00	5,302.65	43.44	4,596.98
APR	0.00	173.99	0.00	0.00	0.00	0.00	2.02	0.00	0.00	4,212.50	0.00	0.00	4,388.51	23.01	4,487.48
MAY	0.00	194.76	233.30	0.00	0.00	0.00	4.18	0.00	0.00	4,025.00	0.00	0.00	4,457.24	39.00	4,468.25
JUN	0.00	146.99	178.86	0.00	0.00	0.00	0.00	500.00	0.00	3,112.50	0.00	0.00	3,938.35	69.04	4,032.35
JUL	0.00	173.02	62.19	0.00	0.00	0.00	3.54	0.00	0.00	3,587.50	0.00	0.00	3,826.25	44.52	4,709.99
AUG	21.22	212.68	270.77	0.00	0.00	0.00	0.00	1,500.00	0.00	5,087.50	0.00	0.00	7,092.17	34.71	5,568.53
SEP	0.00	167.19	285.67	0.00	0.00	0.00	7.55	0.00	0.00	4,662.50	0.00	6.07	5,128.98	28.11	4,944.89
TOTALS	199.08	2,015.22	1,783.03	0.00	0.00	20.39	30.05	2,000.00	0.00	49,005.00	0.00	6.07	55,058.84	515.38	55,606.37

* Does not include residue and C&D columns

** Includes c&d and cubic yard tons

****daily cover figure corrected from 3075.00 Jan 99

April 9, 1997 new C&D rate started: $41.00 a ton or $9.00 cubic yard (lesser of the two)

January 20, 1998 increase in C&D rate: $42.44 a ton or $9.32 cubic yard (lesser of the two)

***October 1998 C & D was at Bee Ridge Facility started at Central County on Nov 1, 1998

January 20, 1999 increase in C&D rate: $43.93 a ton or $9.65 cubic yard (lesser of the two) Went in effect with the Public on March 1, 1999.

CONSTRUCTION AND DEMOLITION FACILITY TONS
MEYER & GABBERT
CENTRAL COUNTY COMPLEX

FY99/00	MULCH	METALS	CONCRETE	WOOD	ALUMINUM	CARD-BOARD	MISC-RECYC	SITE BLD UP	C & D OUT	DAILY COVER	CONCRETE LANDFILL	ROAD BLD UP	TOTAL*	RESIDUE	C&D**
OCT	0.00	181.08	245.83	0.00	0.00	0.00	0.00	0.00	0.00	4,262.50	0.00	0.00	4,689.41	17.17	4,534.57
NOV	0.00	156.76	133.39	0.00	0.00	0.00	7.04	0.00	0.00	4,059.45	0.00	0.00	4,356.64	27.29	4,436.28
DEC	0.00	169.80	172.40	0.00	0.00	0.00	0.00	0.00	0.00	3,987.61	0.00	0.00	4,329.81	25.01	4,790.61
JAN	0.00	161.80	264.09	0.00	0.00	0.00	0.00	0.00	0.00	4,075.82	0.00	0.00	4,501.71	14.51	4,720.36
FEB	7.55	160.84	334.95	0.00	0.00	0.00	6.86	0.00	0.00	4,059.80	0.00	0.00	4,570.00	83.87	5,321.35
MAR	0.00	115.60	126.02	0.00	8.33	0.00	0.00	0.00	2,569.18	1,910.97	0.00	0.00	4,730.10	31.22	4,766.74
APR	128.97	82.89	363.11	0.00	1.78	0.00	0.00	0.00	2,677.57	970.38	0.00	0.00	4,224.70	30.73	4,615.99
MAY	0.00	83.76	498.77	0.00	8.82	0.00	22.17	0.00	3,792.58	1,123.28	0.00	0.00	5,529.38	40.48	5,517.53
JUN	19.17	100.77	1,993.40	0.00	8.33	22.43	0.00	0.00	3,238.30	1,666.38	0.00	0.00	7,048.78	25.73	5,743.46
JUL	50.81	95.59	727.51	0.00	2.41	0.00	12.25	0.00	2,510.40	1,348.89	0.00	0.00	4,747.86	34.80	5,324.11
AUG	0.00	116.31	365.93	0.00	11.36	0.00	0.00	0.00	3,060.39	2,099.88	0.00	0.00	5,653.87	56.00	5,478.88
SEP	93.97	73.30	429.70	0.00	7.29	0.00	28.92	0.00	2,372.40	1,917.61	0.00	0.00	4,923.19	18.46	5,002.18
TOTALS	300.47	1,498.50	5,655.10	0.00	48.32	22.43	77.24	0.00	20,220.82	31,482.57	0.00	0.00	59,305.45	405.27	60,252.06

* Does not include residue and C&D columns

** Includes c&d and cubic yard tons

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January 20, 1998 increase in C&D rate: $42.44 a ton or $9.32 cubic yard (lesser of the two)

January 20, 1999 increase in C&D rate: $43.93 a ton or $9.65 cubic yard (lesser of the two) Went in effect with the Public on March 1, 1999.

January 21, 2000 increase in C&D rate: $45.47 a ton or $9.99 cubic yard (lesser of the two) Went in effect with the Public on February 1, 2000

MEYER & GABBERT CONSTRUCTION AND DEMOLITION FACILITY TONS
CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX

FY00/01	MULCH	METALS	CONCRETE	WOOD	ALUMINUM	CARD-BOARD	MISC-RECYC	SHINGLES ROAD USE	C & D OUT	DAILY COVER	CONCRETE LANDFILL	ROAD BLD UP	TOTAL*	RESIDUE	C&D**
OCT	8.63	85.58	338.07	0.00	7.48	0.00	17.59	0.00	2,365.14	2,241.97	0.00	0.00	5,064.46	22.07	5,079.41
NOV	14.17	77.61	246.23	0.00	4.86	0.00	22.32	0.00	2,093.05	1,691.42	0.00	0.00	4,149.66	19.08	4,461.82
DEC	0.00	53.38	198.46	0.00	4.81	0.00	17.59	0.00	2,113.09	1,860.57	0.00	0.00	4,247.90	29.76	4,567.32
JAN	5.87	87.41	198.46	0.00	4.93	11.08	28.10	0.00	1,792.76	1,516.72	0.00	0.00	3,645.33	22.89	4,073.06
FEB	36.51	72.83	897.52	0.00	7.40	0.00	11.99	0.00	1,828.32	1,197.46	0.00	0.00	4,052.03	19.94	4,139.77
MAR	146.33	105.28	630.78	0.00	6.55	0.00	28.12	0.00	2,272.61	1,683.10	0.00	0.00	4,872.77	27.30	4,892.20
APR	47.06	102.41	376.71	0.00	4.36	0.00	15.95	0.00	2,315.54	1,948.34	0.00	0.00	4,810.37	26.24	4,757.25
MAY	20.22	113.16	218.82	0.00	6.39	0.00	13.95	0.00	2,407.75	1,947.71	0.00	0.00	4,728.00	27.05	5,029.33
JUN ***	35.72	87.12	1,607.36	0.00	4.79	0.00	37.48	0.00	2,155.87	1,586.22	0.00	0.00	5,514.56	31.14	4,734.16
JUL ***	35.19	96.69	3,628.78	2.92	7.13	0.00	44.92	71.79	2,277.03	2,492.20	0.00	0.00	8,656.65	29.94	4,985.15
AUG	18.15	121.00	694.97	0.00	7.91	0.00	11.36	84.48	2,352.66	2,585.73	0.00	0.00	5,876.26	10.95	5,353.77
SEP	72.11	68.16	592.55	0.00	4.40	0.00	8.25	0.00	2,083.07	1,532.61	0.00	0.00	4,361.15	3.78	4,333.09
TOTALS	**439.96**	**1,070.63**	**9,628.71**	**2.92**	**71.01**	**11.08**	**257.62**	**156.27**	**26,056.89**	**22,284.05**	**0.00**	**0.00**	**59,979.14**	**270.14**	**56,406.33**

* Does not include residue and C&D columns

** Includes c&d and cubic yard tons

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MEYER & GABBERT CONSTRUCTION AND DEMOLITION FACILITY TONS
CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX

FY01/02	MULCH	METALS	CONCRETE	PALLETS	ALUMINUM	CARD-BOARD	MISC-RECYC	SHINGLES ROAD USE	C & D OUT	DAILY COVER	CONCRETE LANDFILL	ROAD BLD UP	TOTAL*	RESIDUE	C&D**
OCT	89.99	101.73	187.72	0.00	6.38	0.00	0.00	0.00	2,977.92	2,268.91	0.00	0.00	5,632.65	2.62	5,724.82
NOV	58.63	100.14	149.21	0.00	13.07	0.00	16.34	0.00	2,677.72	2,396.29	0.00	0.00	5,411.40	4.25	5,111.13
DEC	41.28	118.94	69.17	0.00	6.82	0.00	16.32	0.00	2,437.55	2,418.32	0.00	0.00	5,108.40	4.40	5,066.93
JAN	54.74	106.90	222.91	0.00	12.99	0.00	28.78	0.00	2,561.15	2,012.31	0.00	0.00	4,999.78	6.40	5,079.95
FEB	178.90	94.91	73.74	0.00	8.81	28.19	0.00	0.00	2,352.41	2,249.90	0.00	0.00	4,986.86	7.07	4,853.76
MAR	0.00	84.15	218.82	0.00	10.57	18.69	0.00	0.00	2,639.25	1,976.45	0.00	0.00	4,947.93	7.39	5,078.84
APR	0.00	116.81	109.32	0.00	9.31	33.49	9.68	0.00	2,861.50	1,915.54	0.00	0.00	5,055.65	6.37	4,905.74
MAY	188.60	112.74	242.60	0.00	9.91	14.37	0.00	0.00	2,815.10	2,049.11	0.00	0.00	5,432.43	6.87	5,062.05
JUN	0.00	129.46	333.04	0.00	10.20	15.12	0.00	0.00	2,624.93	2,688.67	0.00	0.00	5,801.42	10.01	4,403.78
JUL	87.46	144.66	717.87	0.00	8.32	24.00	9.40	0.00	1,985.90	2,207.65	0.00	0.00	5,185.26	6.63	4,577.17
AUG	127.94	130.12	332.37	0.00	10.97	14.01	0.00	0.00	1,890.73	2,262.20	0.00	0.00	4,768.34	8.73	4,978.17
SEP	22.11	100.88	1,112.70	0.00	11.23	0.00	0.00	0.00	1,834.28	1,873.93	0.00	0.00	4,955.13	8.57	4,516.86
TOTALS	**849.65**	**1,341.44**	**3,769.47**	**0.00**	**118.58**	**147.87**	**80.52**	**0.00**	**29,658.44**	**26,319.28**	**0.00**	**0.00**	**62,285.25**	**79.31**	**59,359.20**

* Does not include residue and C&D columns

** Includes c&d and cubic yard tons

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January 20, 2000 increase in C&D rate: $45.47 a ton or $9.99 cubic yard (lesser of the two) Went in effect with the Public on February 1, 2000

January 20, 2001 increase in C&D rate: $47.06 a ton or $10.34 cubic yard (lesser of the two) Went in effect with the Public on February 1, 2001.

January 20, 2002 increase in C&D rate: $48.71 a ton or $10.70 cubic yard (lesser of the two) Went in effect with Public on February 1, 2002

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MEYER & GABBERT CONSTRUCTION AND DEMOLITION FACILITY TONS
CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX

2002	MULCH	METALS	CONCRETE	PALLETS	ALUMINUM	CARD-BOARD	MISC.-RECYC	SHINGLES ROAD USE	C & D OUT	DAILY COVER	CONCRETE LANDFILL	ROAD BLD UP	TOTAL*	RESIDUE	C&D**
JAN	54.74	106.90	222.91	0.00	12.99	0.00	28.78	0.00	2,561.15	2,012.31	0.00	0.00	4,999.78	6.40	5,079.95
FEB	178.90	94.91	73.74	0.00	8.81	28.19	0.00	0.00	2,352.41	2,249.90	0.00	0.00	4,986.86	7.07	4,853.76
MAR	0.00	84.15	218.82	0.00	10.57	18.69	0.00	0.00	2,639.25	1,976.45	0.00	0.00	4,947.93	7.39	5,078.84
APR	0.00	116.81	109.32	0.00	9.31	33.49	9.68	0.00	2,861.50	1,915.54	0.00	0.00	5,055.65	6.37	4,905.74
MAY	188.60	112.74	242.60	0.00	9.91	14.37	0.00	0.00	2,815.10	2,049.11	0.00	0.00	5,432.43	6.87	5,062.05
JUN	0.00	129.46	333.04	0.00	10.20	15.12	0.00	0.00	2,624.93	2,688.67	0.00	0.00	5,801.42	10.01	4,403.78
JUL	87.46	144.66	717.87	0.00	8.32	24.00	9.40.	0.00	1,985.90	2,207.65	0.00	0.00	5,185.26	6.63	4,577.17
AUG	127.94	130.12	332.37	0.00	10.97	14.01	0.00	0.00	1,890.73	2,262.20	0.00	0.00	4,768.34	8.73	4,978.17
SEP	22.11	100.88	1,112.70	0.00	11.23	0.00	0.00	0.00	1,834.28	1,873.93	0.00	0.00	4,955.13	8.57	4,516.86
OCT	144.43	124.63	1,002.75	0.00	9.60	37.20	9.93	0.00	1,964.70	2,562.41	0.00	0.00	5,855.65	10.28	5,234.23
NOV	0.00	124.33	15.27	0.00	9.29	22.37	0.00	0.00	1,866.61	2,206.96	0.00	0.00	4,244.83	9.38	4,423.19
DEC	189.66	125.30	0.00	0.00	9.95	20.15	0.00	0.00	1,804.89	2,420.88	0.00	0.00	4,570.83	9.54	4,610.75
TOTALS	**993.84**	**1,394.89**	**4,381.39**	**0.00**	**121.15**	**227.59**	**57.79**	**0.00**	**27,201.45**	**26,426.01**	**0.00**	**0.00**	**60,804.11**	**97.24**	**57,724.49**

* Does not include residue and C&D columns

** Includes c&d and cubic yard tons

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January 20, 2000 increase in C&D rate: $45.47 a ton or $9.99 cubic yard (lesser of the two) Went in effect with the Public on February 1, 2000

January 20, 2001 increase in C&D rate: $47.06 a ton or $10.34 cubic yard (lesser of the two) Went in effect with the Public on February 1, 2001.

January 20, 2002 increase in C&D rate: $48.71 a ton or $10.70 cubic yard (lesser of the two) Went in effect with Public on February 1, 2002

MEYER & GABBERT CONSTRUCTION AND DEMOLITION FACILITY TONS
CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX

FY02/03	MULCH	METALS	CONCRETE	PALLETS	ALUMINUM	CARD-BOARD	MISC-RECYC	SHINGLES ROAD USE	C & D OUT	DAILY COVER	CONCRETE LANDFILL	ROAD BLD UP	TOTAL*	RESIDUE	C&D**
OCT	144.43	124.63	1,002.75	0.00	9.60	37.20	9.93	0.00	1,964.70	2,562.41	0.00	0.00	5,855.65	10.28	5,234.23
NOV	0.00	124.33	15.27	0.00	9.29	22.37	0.00	0.00	1,866.61	2,206.96	0.00	0.00	4,244.83	9.38	4,423.19
DEC	189.66	125.30	0.00	0.00	9.95	20.15	0.00	0.00	1,804.89	2,420.88	0.00	0.00	4,570.83	9.54	4,610.75
JAN	0.00	137.61	1,966.69	0.00	9.21	35.02	9.90	0.00	1,877.08	2,082.78	0.00	0.00	6,118.29	9.62	5,126.90
FEB	184.45	91.84	649.65	0.00	1.83	15.95	0.00	0.00	1,804.99	2,495.66	0.00	0.00	5,244.37	8.01	4,682.97
MAR	0.00	112.97	1,574.55	0.00	4.82	20.06	0.00	0.00	1,919.52	3,846.07	0.00	0.00	7,477.99	7.78	6,093.70
APR	84.91	101.08	71.06	0.00	16.77	31.46	9.99	0.00	2,362.46	2,858.20	0.00	0.00	5,535.93	8.96	5,486.45
MAY	49.61	112.95	318.11	0.00	7.21	21.56	0.00	0.00	1,774.81	2,116.81	0.00	0.00	4,401.06	11.16	4,425.93
JUN	25.32	117.40	440.10	0.00	10.08	36.95	0.00	0.00	1,837.76	2,247.06	0.00	0.00	4,714.67	8.09	5,232.89
JUL	95.17	137.68	1,050.04	0.00	9.55	34.67	12.47	0.00	2,230.66	2,618.33	0.00	0.00	6,188.57	5.91	5,393.79
AUG	165.31	94.02	659.11	0.00	9.69	0.00	0.00	0.00	2,070.42	2,150.10	0.00	0.00	5,148.65	0.00	4,954.01
SEP				0.00				0.00			0.00	0.00	0.00		
TOTALS	938.86	1,279.81	7,747.33	0.00	98.00	275.39	42.29	0.00	21,513.90	27,605.26	0.00	0.00	59,500.84	88.73	55,664.81

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January 20, 2000 increase in C&D rate: $45.47 a ton or $9.99 cubic yard (lesser of the two) Went in effect with the Public on February 1, 2000

January 20, 2001 increase in C&D rate: $47.06 a ton or $10.34 cubic yard (lesser of the two) Went in effect with the Public on February 1, 2001.

January 20, 2002 increase in C&D rate: $48.71 a ton or $10.70 cubic yard (lesser of the two) Went in effect with the Public on February 1, 2002.

January 20, 2003 increase in C&D rate: $50.42 a ton or $11.08 cubic yard (lesser of the two) Went in effect with the Public on February 1, 2003.

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